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ORIGINAL ARTICLES

THE OPERATIVE CURE OF CICATRICIAL AND CONGENITAL DEFORMITIES OF THE FACE *

JOHN B. ROBERTS, M.D.
PHILADELPHIA

In the development of eye, ear, nose and throat specialists in recent years some practitioners have lost sight of the broad principles on which all surgery of the face must be based. A tendency has, perhaps, existed to consider only a small section of the facial structures. It is desirable to obtain a wider view of the pathologic conditions wherein must be accomplished the work of the oculist, the otologist, the rhinologist, the dentist and the surgeon. It is not sufficient for the operator to be acquainted only with the so-called surgical affections of this region. He must not forget that general affections such as cretinism, myxedema and other disorders usually seen by the internist, are matters concerning which he must have knowledge to be efficient in the surgical work of the face.

Resort to reparative surgery of the face may be demanded to make good a loss by injury, as for example, of the framework of the nose; to supply a congenital defect as in hare-lip and absence from birth of an ear, to relieve a deformity such as that due to fracture of the zygoma; to give motion to an immobile or otherwise useless eyelid; to construct a wall for the cavity of the mouth after gangrene or gunshot wound of the cheek; or to give comeliness to a countenance disfigured by a horrid distortion due to the scarring of burns.

Dental operators have learned to accomplish astonishing results in orthodontia by the joint agency of retentive appliances, physiologic development and the employment of engineering methods in oral surgery. The surgeon, to be efficient in facial reparations, must use a similar combination of means. In addition he must have a good knowledge of the gross anatomy of the region, including the direction and character of the blood

* Read before the Chicago Medical Society, Nov. 16, 1910.

and nerve supply. He must also be familiar with the physiology and the mechanical relations of the organs of special sense.

A due recognition of the mechanical problems presented and a study of the physical as well as the physiologic principles involved are essential to success. The inefficient results of surgical treatment sometimes seen after operative attacks on severe facial disfigurements are evidences of the truth of this statement. A reliance, however, on the mere mechanical perfection of the technic will not be sufficient for success. The surgeon must have a comprehension of the value of Nature's power of recuperation, when not impeded by septic infection of the tissues, and an ability promptly to recognize and successfully stop undesirable bacterial influences.

Surgical patience must also be a part of the equipment of the operator as patience and faith in him must be a part of the mental attitude of the patient. Repetition of operation is so often necessary and time for Nature to complete the work so absolutely essential that undue haste and impatience must be barred from the very beginning of treatment to the end.

Permanent implantations of foreign substances, plastic and solid, in the tissues for the purpose of gaining rigidity or altering contour, success in transplanting pieces of skin, cartilage, periosteum and bone, and the influences obtained by nerve anastomosis and changes in blood current, and examinations with *x*-rays have given the modern plastic surgeon new powers.

Reconstructive surgery of the face is not restricted to the skin and fascia. It includes operations on the bones of the face and skull and mechanical work on the teeth. The attainment of a proper occlusion of the teeth, the growth of the mandible, and the development of the accessory sinuses of the nose are most important factors in facial surgery. Sometimes a deformity may be corrected or an impending distortion prevented by mechanical appliances, intra-oral or extra-oral, alone. Depressed fracture of the zygoma is a good example of the need of correction of an osseous contour to relieve facial disfigurement.

Temporary resection of bone or temporary displacement of the soft tissues may be a necessary strategical move to gain access to the operative field. This is illustrated by the lateral displacement of the whole nose on a musculo-cutaneous hinge to enable the surgeon to reach a large disfiguring tumor in the naso-pharynx. After removal of such a growth, the nose is replaced and no ugly scar need be left. Many operations can be made within the mouth without external scarring, provided that efficient instruments be used by trained hands.

The operator in these major restorations must be a surgeon trained to meet the emergencies of hemorrhage, asphyxia and shock. His assistants and anesthetist cannot be tyros, unless the safety of the patient is considered to be unimportant. Sometimes preliminary control of blood trunks or temporary tracheotomy is demanded.

The anesthesia in surgery of the face is best obtained by using a hypodermatic injection of morphin, gr. ¼, and atropin, gr. 1/150, fol-

lowed in about thirty minutes by inhalations of ether. The anesthetic sleep may be continued during operation with small amounts of ether vapor or chloroform vapor, pumped into the mouth or nose by means of a rubber bulb attached to a bottle with an exit tube. A trained assistant should always perform this service, lest postoperative ether pneumonia or sudden chloroform death occur. It is probable that a hypodermatic injection of hyoscin hydrobromate, about fifteen minutes after the injection of the morphin and atropin, lessens the amount of ether required to reduce freedom from pain. The dose should be from gr. 1/100 to gr. 1/50.

The external incisions should be made parallel to, or in the normal wrinkles in the face and not across them, so far as is possible. The portions of the face ordinarily in shadow are regions in which scars will be little seen. Behind the ear, under the brow and below the jaw or chin are such elective situations. By raising the upper lip or depressing the lower lip cuts may often be made inside the mouth and thus avoid visible scarring. Extensive operations on the bones may be made by these routes. Curved incisions make comparatively inconspicuous scars.

There are various methods of obtaining the tissues needed to restore lost structures, or to replace those moved after correcting cicatricial displacements. Flaps of skin and fascia may be cut in a manner which will leave their circulation and innervation comparatively good, because a pedicle remains to connect them with the general circulatory and nervous system. Such flaps will usually survive the change in position, even if there is some diminution of blood supply due to the bending and twisting of the footstalk. Tension must not be great on the pedicle. One of the difficulties in plastic surgery of the face is the frequent impossibility of preventing some septic soiling from secretions of the eyes, nose or mouth. Hence these pedunculated flaps are greatly employed. The asepsis should at least be not too defective during and after operation. Grafts, or free flaps, which are so-called because they have no pedicle, are more liable to become necrotic on the face than in many other regions of the body because of the frequent failure in asepsis. Grafts of skin cut after the methods of Réverdin, Thiersch, or Wolfe or Krause are used, however, satisfactorily at times.

When proper cellulo-cutaneous material cannot be obtained from the regions of the face or neck, it is not difficult to transport a portion of skin and fascia from the thigh or abdomen. This is done by raising a flap from either region, leaving a broad pedicle to maintain its circulation. The raw surface of the flap is then sutured to a raw surface made on the hand to receive it. The hand is fixed by dressings of gypsum to the thigh or abdomen for fourteen days. After the lapse of that time the flap is cut loose from the thigh or abdomen. It has grown to the hand. Later the hand is lifted to the face, and the flap, now having its circulation from the vessels in the hand, is used to repair the gap in the face. Subsequently it is modeled into the requisite shape.

A somewhat similar method is to fix the arm or hand to the face, by cutting and stitching a properly shaped flap from the surface of the arm or the palm of the hand, leaving only a pedicle attached to that member. The pedicle is divided after about fourteen days.

Bone grafts may readily be cut from the ribs or tibia and transplanted into the face. A toe has been grafted on the hand and transported to the face to aid in reconstructing a nose. Periosteal and cartilaginous grafts may be readily obtained from the costal region of the chest. Sometimes grafts of bone are shaved from the cranial bones.

When it becomes necessary to give rigidity to the reconstructed part of the face cellulo-cutaneous flaps may be superimposed by repeated operations until the resulting fibrous mass becomes stiff enough to answer the purpose. If this method is unsatisfactory, strips of cartilage, periosteum or bone itself may be transferred or transplanted into the flaps. These schemes answer in rhinoplasty and otoplasty. Sometimes these are cut at the time of operation and at once enclosed in the reparative flaps. At other times they are planted near the region to be repaired, and are allowed to become attached to the surrounding tissues by vascular connections. Later a flap containing the rigid graft is cut and used for the plastic operation.

Rigidity may also be obtained by introducing into the subcutaneous tissues paraffin, or compositions containing paraffin, in a fluid state, which subsequently become hard by cooling. The paraffin should have a melting point of about 105 to 110° F. It is melted and sterilized by heat, and injected under the skin, previously sterilized, by means of a hypodermic syringe and a needle with a rather large bore. Before the plastic substance becomes entirely hardened in cooling it may be moulded with the fingers. This method of operating is very valuable in cases of saddle-nose of mild grade. Occasionally plastic operations are made more effectual by giving solidity or rigidity to the tissues by the insertion and encapsulation of glass or metal globes, as in the eye, plates of metal or celluloid, or wire filigree.

JOINT DISEASES FROM THE ORTHOPEDIC STANDPOINT*

JOHN RIDLON, M.D.
CHICAGO

From an orthopedic standpoint, in the consideration of chronic joint diseases we have many joint diseases due to many and various causes; but of the diseases that the orthopedic surgeon sees and is called on to treat, he practically only has osteo-arthritis, arthritis deformans, or rheumatoid arthritis, as it is variously called, and tuberculous diseases of the joints. As yet we do not know so very much about the cause of arthritis deformans, although we think that recently we have learned quite a good

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

deal; but of that I do not think I am called on to speak at this time, and my remarks had better be limited to a consideration of tuberculous joint diseases, and it will be my endeavor to fix in your mind a little more clearly what the orthopedic surgeon aims to do, and what you may aim to do as general practitioners and general surgeons in the cases you are called on to treat, and also perhaps to say a later word than has come to you about the views of orthopedic surgeons at the present time as to the treatment of these diseases.

In tuberculous joint disease there is one principle of treatment which is required in the management of all cases, and that is protection of the joint. No matter whether these joints are treated by mechanical, surgical, or by medical means, whether tuberculin is given, or the joints are injected with various medicines, or the various pastes are injected into tuberculous sinuses, in all cases these joints must be protected, in the broad sense, from motion. They must be protected from weight-bearing when in the lower extremities, and they must be protected from the injurious effects of the involuntary muscular spasm that is in force in the muscles controlling motions of the joints. Those are the things we have to do.

Now, what do we have to do in the treatment of the individual case? If the diagnosis is made and we are permitted to treat the case before deformity has taken place, all we have to do is to protect these joints for a reasonable time. But if the case comes to us after deformity has taken place, the first thing we have to do is to correct the deformity. That is essential for the good function of the limb, for the usefulness of the limb the rest of that individual's life. The deformity that has been allowed to develop in the diseased joint must be corrected, and the limb must be put in such a position that it will be most useful to the patient when once it is well. There are two ways of correcting these deformities. One is by an anesthetic and immediate correction with or without a cutting operation, and the other is to correct it gradually by a coaxing process by immobilizing the joint, inducing the contracted flexor muscles to relax, and changing the position from week to week, or fortnight to fortnight, or month to month, until the deformity has been corrected. And these deformities can be corrected in this way if structural shortening has not taken place in the flexor muscles, and bony changes in the joint have not gone on to such an extent that they prevent anatomic correction by this gentle means. One should always in my opinion correct these deformities by gentle means rather than by the immediate and active forcible means, if it is possible to do so, because correcting them by gentle means is a harmless and safe procedure, while correcting them by force either with or without a cutting operation is risky for the patient, and a certain percentage, perhaps as high as 10 per cent., will die as the result of general infection through the immediate correction by force of the deformed joint. Then, assuming we have corrected the deformity, we are in the same position for the treatment we should have been in if we had had no deformity at all, if we had received the case early.

As to protection of the joint, the first element of protection is immobilization, to so thoroughly immobilize the joint that the muscles controlling its action are put entirely at rest. How shall that be done? Generally speaking, in the hands of most men it can be done best by a strong, heavy, long, well-fitting, well-padded plaster-of-Paris splint, whether that joint is in the spine, the ankle, the knee, the hip, or anywhere else. Generally the immobilization can be done best in the hands of most men by a plaster-of-Paris splint; but in putting on a plaster-of-Paris splint remember the difficulty of immobilization and carry it far enough above the point of disease and far enough below the point of disease to really immobilize. It is ridiculous to try to immobilize a knee joint by starting a plaster-of-Paris splint at the ankle and ending three or four inches above the knee. If you want to immobilize a knee joint you must carry the plaster-of-Paris splint as far above as you started below, if you would make the immobilization effective; in the same way, when you wish to thoroughly immobilize a hip joint, if the joint is sensitive, and you wish to make the immobilization perfect, the plaster-of-Paris splint must be commenced at the ankle and carried as high as the axilla. In immobilizing the spine for Pott's disease, if the disease is at the eighth or ninth dorsal, in between the shoulder blades, it is absurd to put on a plaster jacket that will extend high enough to cover the angular deformity and only come up two or three inches below the neck in front. It covers up the disease and allows it to go on increasing while you and the patient are in fancied security. If you would treat Pott's disease in that region, you must carry the plaster splint up under the elevated chin, or better, include the entire head. The men who do not appreciate the importance of immobilization do not get immobilization. Undoubtedly, there are some cases that some physicians can immobilize more satisfactorily for themselves and for the patient by orthopedic appliances, such as steel braces. If you can design a brace with which to immobilize a joint, make your drawings and take them to a mechanic and oversee the construction of them, and can fit the brace yourself, you may be competent to treat the case by such means, but if you cannot do this, then you are not competent to treat any tuberculous joint disease with the brace. You must be able to do these things yourself. You cannot take measurements for a brace in Danville, send the order to Chicago and have a brace made that will serve you or the patient satisfactorily. You must be able to do these things yourself, and if you cannot do them, then use plaster-of-Paris with which you are all more or less familiar.

Immobilization in the past or up to within a few years has been the mainstay in the treatment of tuberculous joint diseases. It has been commenced early and kept up indefinitely and late until it was believed the joint was entirely well. To-day a good many orthopedic surgeons have changed or modified that view to some extent and they do not any longer believe that as complete immobilization, as is possible, is necessary or even the best treatment for a tuberculous joint until it is thoroughly well. They believe that there comes a time when there is no longer a tendency for the development of deformity at that joint, when the immo-

bilization can be diminished, the protection from motion lessened, a certain amount of motion permitted, and that a certain amount of motion will serve to hasten a cure. For instance, if you are treating a case of hip disease and you start treatment with a plaster-of-Paris splint, beginning at the shoe top and carried to the axilla, you may after a year or two or three, when there is no longer any tendency to the development of deformity, shorten this splint at the knee and allow knee motion; you may shorten this splint at the top down to the level of the umbilicus, so that there will be some motion at the hip joint, perhaps twenty or thirty-five degrees, and such motion in very many cases is not prejudicial, but adds somewhat to the hastening of a cure of the case. So much, then, for the factor of immobilization.

The next factor is protection from weight bearing, protection to the ankle, or the knee, or the hip, or the spine, when the patient is sitting up or standing and going about. If you use a plaster splint alone perfect protection cannot be had. The best assistance to protection probably is to be had from crutches, but they are unreliable, particularly so in the majority of these cases which will be in young children. So to protect any of the joints of the lower extremity or of the spine from weight bearing and the injury from weight bearing, the only safe protection is to put the patient in the horizontal position and to keep him there until he is well on the road to recovery. This is especially important in cases of tuberculosis of the spine. When I was a young man, no one thought of putting a patient with a tuberculous spine in bed, particularly when he or she was not suffering, and if put in bed, he was only put there for a few weeks, but year after year, since these twenty-five or thirty years have passed, we have learned to put these patients in bed for longer periods of time; and now, if we will treat a case of Pott's disease with the best possible result, we put the patient in the recumbent position and he is not allowed to stand up nor to sit up once for two or three or four years. If you have a case where the deformity is not great and its duration not longer than some months or a year, if you will put that patient's spine in the hyperextended position, bending it backward as far as it can go, and keeping it in the fullest hyperextension for about that time, you can be reasonably sure of curing spinal tuberculosis without deformity, and there is no other way in which you can cure spinal tuberculosis with deformity. If you do not do that, when the time comes you will discharge that patient really ashamed of the result, because the deformity will increase in spite of anything you can do in almost all the cases that you treat in the upright position. So do not hesitate to put patients in the lying posture and keep them lying down long enough to cure the disease of the spine.

The next point is protection against the involuntary muscular spasm. We get some protection from immobilization because it quiets the spasmodic action of the muscles. We get some protection by recumbency in these cases. In some instances we need something more, particularly in the hip cases. In some of these we need traction, and traction can be applied by weight and pulley. The patient must be absolutely in the

recumbent position in order to make traction by weight and pulley effective, and it must be kept up absolutely and continuously. The most effective and satisfactory traction apparatus for a hip case is a traction brace, but a traction brace is not a good and satisfactory appliance for any man to use who has not been trained in the use of it, and very few men have had the opportunity of being really trained in the use of traction braces, so that, generally speaking, I would say to you who must use traction in cases of hip disease, you had better be satisfied with recumbency and traction by weight and pulley, with the patient kept in bed for a certain period. And in connection with traction I take this occasion to utter a word of warning: there are some cases where traction increases the spasm, increases the pain, increases the suffering, but fortunately there are not very many. This is more often seen in shoulder joint disease, where even the weight of the arm is an added cause to exciting muscular spasm, and an added cause for pain and suffering, and where the support of the arm by a sling under the elbow and forearm, taking off the weight of the arm, will relieve the muscular spasm.

Just one other point, and that is with reference to injections of medicines, such as formalin, into these joints. In some cases it hastens the cure of the tuberculosis, but in all instances it leads to a stiffened joint which is wholly unnecessary. It is better to take a little more time and have a movable joint than to take a little less time and by using formalin have a stiff joint. Don't do it.

As to tuberculous abscesses, leave them alone unless they become mixed infections; then, of course, treat them as mixed infections, but ordinary cold tuberculous abscesses should be left alone. Of 100 cases, more would do better and more would live if they never saw a doctor than if they were treated surgically.

As to the treatment of tuberculous sinuses, we have used various kinds of paste, starting with Emil Beck's paste and modifying that in many ways during the last two or three years in treating something like 150 cases, and of this number I believe that the paste is useful in about 25 per cent. of the cases.

NEUROLOGICAL FEATURES IN SOME JOINT LESIONS*

ARCHIBALD CHURCH, M.D.
CHICAGO, ILL.

A consideration of this question may properly be introduced by very brief reference to some of the anatomical relations of joints and nerve supply. It is useful to remember that every joint in the extremities is supplied by the same nerve that furnishes motor and trophic control to the muscles which extend that joint. To this simple rule there is a single exception—the ankle joint in its innervation is related to the calf

* Read at the sixtieth annual meeting of the Illinois State Medical Society, at Danville, May 18, 1910.

muscles which are properly flexors of the joint. The importance of this rule is at once evident when we realize that any pathologic process in the joint, whether slight or severe, may produce a wasting of the muscles which control the joint, and in that event the muscles involved are invariably the extensors, again with the single exception of the calf group and the ankle joint. The method in which this process works was shown by Mitchell, Valtat, and Charcot to depend on the reflex mechanism; that is to say, if the reflex circuit between joint and muscle by way of the spinal cord through the posterior root, the anterior gray horn, and the anterior root was not complete, the involvement of muscle secondary to an arthritis did not follow. Valtat, for instance, found that he could experimentally produce a limited muscular atrophy by inducing inflammation of the joint, and Hoffa found that when he irritated joints on both sides of the body and cut the posterior roots on one side, that the muscular wasting only occurred on the side where the arc was not interrupted. This conclusion, however, has been questioned by Bumm.[1] He reports numerous experiments in animals in which he produced arthritis in one extremity and then placed both this extremity and the one opposite in splints, and found that the so-called arthritic muscular atrophy appeared more quickly in the sound but splinted leg than in the one that was the seat of the joint inflammation. He draws the conclusion that the inactivity induced by an arthritis plays a greater part in the production of the subsequent muscle wasting than the joint inflammation itself or its influence on the correlated muscles through the reflex arc.

If this be true, the relation of this fact to the surgery of joint lesions and fractures, and its significance in the management of splints is quite apparent. He added a number of further observations to this idea of "inactivity-atrophy"[2] in the following year.

Sudek[3] reviews the inactivity-theory of Bumm and insists that the integrity of the muscles serving a joint depends on a number of circumstances, the principal one of which is the normal condition of joint surfaces, nerves, and muscle tissue, but an equally important one is the normal use of the joint mechanism. He draws the conclusion that the arthritic muscular atrophy which so commonly selects the extensor group of muscles while it may be induced by inactivity, nevertheless is produced through the reflex arc even under those circumstances, thereby maintaining the almost crucial proof brought forth in the experiments of Hoffa already mentioned. As practitioners, the important consideration is that either inflammation or fixation may result, and generally does result, in more or less wasting of the extensor group of muscles serving the implicated joints.

The tolerably definite symptoms presented by an arthritic atrophy of the sort under consideration are as follows: 1. Retention of the tendon reflexes or their exaggeration; 2. Maintenance of the electrical excitability of both muscles and nerves in a degree proportional to the amount of preserved muscle bulk; 3. Limitation of the atrophy to the extensors;

1. Münch. med. Wchnschr., 1905.
2. Wien. med. Presse, No. 51.
3. Münch. med. Wchnschr., 1906.

4. No decided sensory changes excepting the pain and tenderness directly and topically related to the joint lesion.

The prognosis of these atrophies is directly dependent on that of the joint lesion, although a fractional atrophy may persist indefinitely even when the joint seems to have made a complete recovery. I say seems to have recovered, because in such an instance it is impossible to assert full restitution of normal conditions in a joint once seriously disturbed.

Unlike these extensor muscle atrophies dependent on joint lesions or fixations, and which are practically always situated on the proximal side of the joint, we sometimes encounter a distally situated muscular defect due to the injury or inflammation of nerves which pass over the affected joints. In such cases, motor defect is found in the distribution of such nerves with decreased or abolished or changed reflex, electrical, trophic, and sensory features. In a word, these are accidental and secondary neuritides.

Associated with those changes in the spinal cord which are typically a part of tabes we encounter alleged dystrophic joint changes of the most serious and interesting character. These arthropathies, with which the name of Charcot is permanently linked, still present a debatable pathogenesis. There can be little doubt that traumatism acts as an inciting cause but the condition of the joints due to the changes in the chemical constituents of the bones, the alterations in the trophism of the soft parts, the lack of support and control due to the hypotonically relaxed muscles, the failure of sensory warnings due to anesthesia, and the incoordinate and violent use of the limbs, all contribute something to the occurrence of tabic joints.

Among those who have reviewed this pathologic question in the present decade, Idelsohn[4] attributes most importance to the vascular changes in and about the joints and is disposed to neglect or even deny the trophic view.

Borchard[5] in studying a case of arthropathy in a syringomyelic asserts that trauma plays the leading and perhaps the sole causal part. Etienne[6] reports a case of tabic joints in a man who forty years before had repeated attacks of subacute rheumatism. To these he attributes vascular changes which after the development of tabes led to arthropathies. He recites another case in which both knees presented enormous arthropathies in a tabic who five years before sustained a severe traumatism of both these joints, and traces one to the other. Two years later (1908) after further study of these joint lesions Etienne with Champay[7] reports findings in the anterior horn cells of spinal segments corresponding to arthropathic joints in a case of tabes, one of syringomyelia, and one of progressive spinal muscular atrophy. All showed similar material pathologic cell changes. Such changes are necessarily related to the trophic integrity of joints, but whether the cord cell changes are primary, secondary, or synchronous and coordinate with the joint changes is not yet determined. It is surely admissible that such arthropathies cannot be considered as

4. Deutsch. Zeitschr. f. Nervenheilk., Bd. 27, p. 121.
5. Monatschr. f. Unfallheilk., Bd. 72, p. 513.
6. Rev. Neurologique, No. 23, p. 1137.
7. L'Encephale, No. 5, p. 169.

purely traumatic or purely vascular as they do not, in the absence of spinal cord changes, occur in the uncountable cases of joint injury or vascular changes or both combined.

Taking the arthritic muscular atrophies and the Charcot arthropathies together, there seems to be good ground for emphasizing the direct and reflex relations of trophic cord elements to joint lesions.

These considerations attain still greater importance when we turn to the subject of arthritis deformans. In the arthritic muscular atrophies it seems proved that the process beginning in the joint acts through the trophic arc. In tabes it is clear that cord changes related to this arc are essential to the extensive and characteristic arthropathies. Can we then incriminate or must we exclude the cord, that is to say the reflex mechanism, in arthritis deformans? As clinicians we readily recall the flexed postures of body and limbs, of wrists and fingers, of neck and spine, of shoulders, elbows, hips and knees in chronic multiple arthritis. This universal flexor predominance may have some relation to the rule of joint and extensor muscle association thereby tending to exaggerate the normal preponderance of flexor muscles. At the ankle joint we find the calf group yielding according to the rule of atrophies, and the foot does not strongly tend to the equine position even in cases long bedridden. When the joints become more or less anchylosed the extensor atrophies are correspondingly developed. That arthritis deformans is a result of metabolic faults may be freely admitted, but it would seem probable that the distribution of the joint features, the characteristic joint deformities, and the trophic changes in joints and ligaments find their origin in the nervous supply and the trophic control of spinal centers. In this condition, as far as I know, cellular cord changes have not been demonstrated, but attention has for the most part been focussed on the joints alone.

In a number of cases of arthritis deformans in young subjects I have noted numerous functional and neuritic features such as neurasthenia, localized paresthesias, hysteria, and a decided tendency to extensor atrophy. Persistent attention to the correction of the nervous manifestations has seemed, of course in conjunction with general and dietetic management, to secure better and more permanent relief than either method alone. A combination of rest-cure, massage, hydrotherapy, and dietetics is strongly indicated.

"Hysterical joints" sometimes present a great deal of diagnostic difficulty. Not only may hysteria impose a classical arthritic position on a limb the seat of a hysterical joint, but the articulation may show considerable swelling in the form of hysterical edema. Usually an anesthetic demonstrates the complete freedom of the joint. A close analysis of the onset conditions, commonly with emotional disturbance and a too rapid development of the full picture, may put one on guard. The peculiar superficial sensitiveness and particularly its geometrical limits, with the absence of fever, leukocytosis and other inflammatory data, confirm the functional nature of the joint trouble. But sometimes an actual arthritis is the starting point of the hysterical syndrome, which may greatly intensify all the symptoms and in some cases long outlast the joint inflammation.

THE BACTERIOLOGY AND PATHOLOGY OF ARTHRITIS *

ERNEST E. IRONS, M.D.
CHICAGO

In addition to the infections resulting from trauma, or direct extension from an adjacent focus of suppuration, or associated with certain specific diseases such as syphilis and tuberculosis, lesions of the joints, periosteum, and tendon sheaths may occur in practically all the acute infectious diseases, either as an incident in the course of the disease or as a more or less remote sequel.

In some of these acute diseases such as typhoid fever and pneumonia the specific organism may be isolated from the blood in a very high percentage of cases and is probably present in all at some period of the disease. The streptococcal arthritis following scarlet fever is associated with a demonstrable streptococcemia. In septicemia and pyemia, the joints are not infrequently involved. Recent studies in epidemic meningitis have shown that the organisms are present in the blood, and cases of arthritis have been reported. In all of these infections, the arthritis occurs as a more or less incidental complication of diseases in which the prominent phenomena involve other organs of the body.

Acute articular rheumatism presents another type of disease in which the involvement of the serous membranes of joints, heart, and pleura occupy a more prominent place in the general symptomatology. While we may not be willing to accept the claims of the *Micrococcus rheumaticus,* or the bacillus of Achalme, we must admit that the symptoms and course of acute articular rheumatism are those of an acute infection, many of the features of which resemble those of a mild streptococcal origin, "a modified pyemia." Of interest in this connection is the recent report by Senator[1] of cases of typical acute articular rheumatism and endocarditis following operative trauma to the nose. The mild arthritides occasionally seen after operations about the nose and pharynx and those associated with apparently localized infections such as furunculosis are instances of mild bacteriemia with localization in the joints.

Gonococcal arthritis presents still another type of general infection in which, however, the localizations in joints, tendon-sheaths and periosteum frequently overshadow the constitutional features of the disease. Owing to the difficulties attending the culture of the gonococcus, it is not so readily demonstrable in the blood, but is nevertheless present during the acute stages at least of gonococcal arthritis, and has been repeatedly isolated from the blood and the joints. This fact is of considerable importance in the treatment of acute arthritis in which the severe septic symptoms may suggest a frankly purulent arthritis, when in reality the toxic symptoms are due to the coincident bacteriemia. In some cases of gonococcal infection, the arthritis may be insignificant or absent, and the disease then presents the picture of a severe sepsis, or may simulate typhoid fever.

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* Read at the Sixtieth Annual Meeting of the Illinois Medical Society at Danville, May 18, 1910.

1. Med. Klin., vi, No. 3, Feb. 20, 1910.

Acute tuberculous arthritis is occasionally seen in which the arthritis may subside without leaving clinical signs, only to recur later in the same or new joints, finally passing into the more common forms of chronic tuberculous joint disease. A number of these cases of acute transient arthritis have been shown to be of bacillary origin and not as was formerly believed the result of toxins acting on the joints. The arthritis is often associated with a frank tuberculosis elsewhere in the body, but may occur without clinical evidence of such involvement. In the instances where autopsies have been made, caseating tuberculosis of peribronchial or other lymph nodes is a frequent finding, either with or without other tuberculous lesions.

The pathologic changes in the tissues in which the organism of any given bacteriemia becomes localized obviously will depend on the virulence of the organism, the general resistance of the individual, and the anatomic structure and physiologic relations of the region involved. Serous membranes such as those of the joints are continually exposed to physiologic trauma, and for this reason, among others, an irritative lesion which might pass unnoticed in muscle or subcutaneous tissue, quickly produces clinical symptoms in the joint.

The bacterial embolus reaches some portion of the periarticular structure and a focus of infection is formed either in the more superficial portions of the joint or deeper in the capsule, or in the fibrous tissue underlying the synovialis. In the latter case, the layers of cells of the synovialis become swollen, and at the point of greatest damage desquamation of the altered cells of the synovial surface occurs. This irritation may cause a rapid increase in the synovial secretion, with resulting distention of the joint. The effusion may be sterile or may contain the infecting organism, if it has passed from the original focus through the damaged tissues of the synovialis. D. J. Davis in a study of experimental arthritis in rabbits, using cultures of streptococcus pyogenes injected into the ear vein, has found that when the joints are examined soon after the appearance of the arthritis, the lesion is frequently entirely extrasynovial; later the joint contains a small amount of glairy fluid in which a few organisms and leukocytes are present; still later a purulent arthritis is found. The normal motions of the joint and the traction of the muscles tend to increase the tension of the focus, and favor its extension into the joint.

If the focus of infection lies at a point more distant from the joint surface, there may be no involvement of the synovialis, and clinically we have a more or less extensive periarthritis.

The nature of the infecting organism whether streptococcus, pneumococcus, or gonococcus, etc., and the virulence of the particular strain relative to the resisting power of the body determine, of course, to a large extent the duration and degree of pathologic changes of the arthritis. Acute arthritis often heals with complete restoration of normal joint structure and function, sometimes even after prolonged intra-articular suppuration. Or if the infection has been virulent or extensive the joint cartilage may be partially destroyed or secondary connective tissue proliferation occur with resulting adhesions between the joint surfaces.

The study of the chronic forms of infectious arthritis which follow the acute arthritides of known etiology is of interest because it throws much light on the ill-defined group of diseases known as arthritis deformans. This group has in the past been made the repository for the more obscure cases of chronic joint disease whether supposedly metabolic, nutritional or infectious in origin, for which a more definite etiologic classification could not be found. If by comparative studies the infectious origin of a certain number of the obscure cases can be demonstrated, the task of solving the problem of the etiology of the remainder becomes to this extent simplified.

The etiologic relation of chronic local infections to arthritis deformans has been long recognized. Recurring and persistent infections of the tonsils, ear and nose have often been found associated with arthritis deformans, the symptoms of which have subsided after the removal of the source of infection. Wirgman and Turner[2] have noted a frequent pyorrhea alveolaris in chronic arthritides, and with the cure of the buccal suppuration the joint symptoms have improved. E. H. Ochsner[3] and others have noted the subsidence of beginning arthritis on the removal of abdominal sources of infection and toxemia such as chronic appendicitis and cholecystitis.

The series of joint lesions due to the gonococcus form an instructive field for the study of the different clinical varieties of arthritis which may be caused by one organism. Here we have first the ordinary acute gonococcal arthritis with frequent occurrence of the organisms in the joint fluid, and with periarthritis prominently associated. This acute stage may heal, with or without adhesions or ankylosis, or may pass into a chronic or recurrent stage in which there is often a persistent focus of infection elsewhere in the body. The acute stage may, however, subside almost entirely, and after the lapse of months or years, the joint changes again advance, but this time without the symptoms of infection and result in a pathologic condition of the joint identical with that found in arthritis deformans.

Still more interesting are those cases described by Bouchard[4] and others in which the typical joint lesions of arthritis deformans develop years after gonococcal infection without the occurrence of an initial acute stage.

Cases illustrative of a similar series of arthritic changes may be found in the literature of typhoid arthritis. Rothschild[5] has recently reported cases of typhoid fever with acute arthritis in which after several years the typical lesions of arthritis deformans developed in the joints involved in the acute arthritis. In rabbits, Davis has seen arthritic lesions identical with those of arthritis deformans develop subsequent to acute streptococcus arthritis.

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2. Clin. Jour., London, May 26, 1909.
3. Jour. A. M. A., 1910, liv, 771.
4. Zeitschr. f. Klin. Med., 1907, lxii, 19.
5. Berl. klin. Wchnschr., 1909, xlvii, No. 4, 133.

The bacteria which initiate an arthritis may disappear entirely from the joint, but if the synovialis or the perichondrium are sufficiently injured, the connective tissue formation may continue, and stimulated by the trauma of joint motion, the slow erosion of cartilage by granulation tissue overgrowth results in a gradual disorganization or perhaps bony ankylosis of the joint. The persistence of the original infection is not essential to the progression of the chronic arthritic changes.

Nichols and Richardson[6] from an extensive study of the pathology of arthritis deformans have proposed a classification into proliferative and degenerative types, these terms referring to the character of the pathologic process rather than to the clinical appearance of the joint. The proliferative type begins in the synovialis and perichondrium, and is characterized by the erosion and absorption of cartilage by proliferating granulation tissue, the formation of pedunculated masses of connective tissue within the joint, and frequently ankylosis either fibrous or through the fusion of exposed bony extremities. The degenerative type begins in the substance of the cartilage, which becomes striated and degenerates, leaving the underlying bone exposed. The increased irritation of this exposed bone results in a thickening of the trabeculæ with increase in the density of the bone, and eburnation. The plane of articulation is altered, and overgrowth of one facet occurs to compensate for loss of substance in the opposite facet with the production of great irregularities in the articular surfaces and frequently ankylosis by deformity without true adhesion of joint surfaces.

Although these two types of arthritis cannot be definitely associated with any special set of etiologic agents, cases of known infectious origin are frequently found to be of the proliferative type, whereas the degenerative type is more often found in persons past middle age in whom nutritional changes in the tissues are likely to be present.

A certain proportion of cases of arthritis deformans are clearly due to the presence of bacteria in the joints, either for long periods, or during the initial stages of the disease. There are, however, many cases in which it seems probable that the arthritic changes are the result of the selective action of toxins of bacterial or metabolic origin, and in still other instances it appears that trauma without infection and the faulty nutrition attendant on advancing age are responsible for the joint changes. Thus F. Kroh[7] was able to produce the lesions of arthritis deformans in animals by operative removal of one condyle of the femur.

The further research into the etiology and relationship of the various types of arthritis will be materially assisted by bearing in mind that not only may the same organism give rise to several forms of arthritis, but that the same type of arthritis may be due to widely different causes, and that when a joint has received its initial injury, the subsequent pathologic changes are determined to a large extent by local mechanical and physiologic conditions to which the tissues of the joint are exposed.

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6. Jour. Med. Research, 1909, xxi, No. 2, p. 149.
7. Deutsch. Zeitschr. f. Chir., 1909, xcix, Nos. 3-6.

DISCUSSION ON PAPERS OF DRS. IRONS, CHURCH AND RIDLON.

Dr. John L. Porter, Chicago:—I regret very much we have not had the pleasure of listening to Dr. Murphy's paper, because I anticipated great pleasure in hearing what he had to say about the treatment, mechanical and otherwise, of joint infections.

In listening to what has been said, there are two or three points that have occurred to me which I want to speak of briefly. First, in regard to the treatment of gonorrheal joints. During the past two years I have made it a practice to wash out with normal salt solution or with sterile water all gonorrheal joints which came under my observation before they had become stiff. The more acute the attack the better has been the result from this treatment. I have followed out that course of treatment in quite a large series of cases in my service at the Cook County Hospital and at the St. Luke's Hospital, and I have not yet seen a case of gonorrheal arthritis which has not recovered more promptly by that method of treatment than by any expectant method. The method which I use is simply to introduce into the joint two trocars. If it is a knee joint I introduce one trocar from each side, and I wash out the joint thoroughly with normal salt solution, or with a weak solution of iodin, or even sterile water, seal up the punctures, immobilize the joint, and I have been surprised at the rapidity of the recovery. If there is any motion left in the knee joint, I have no hesitation in washing it out. If the joint is stiff, I do not believe it does any good to wash it out, but in an acute case of gonorrheal arthritis, with intense pain, muscular spasm, swelling of the joint, recovery is more satisfactory by this plan than by any expectant method of treatment which I have ever used. I believe it is good surgery.

One word about the treatment of arthritis deformans. There seems to be in the minds of the general practitioners an idea that rheumatoid arthritis is benefited by motion, massage, vibratory treatment, hot air, etc. In an experience covering quite a large number of cases of my own, as well as observing those in the practice of others, we have learned that our best results in cases of arthritis deformans are secured by immobilization, the same as in tuberculosis or any of the other chronic infections. It seems to many that prolonged immobilization in a case of tuberculosis of the hip or of the spine, and especially prolonged recumbency in bed, is a very tedious punishment. I want to say that is a mistake. We must remember that most of these cases of tuberculosis of the hip and spine in particular occur in children, and a child of the age 5 to 10 years can well afford four years or even five years recumbency, if it can be carried out, to get well or to help it to get well without deformity. Perhaps this would not apply to adult life, although in many cases I have kept adults recumbent in bed with traction, where paraplegia or signs of cord pressure supervened on a tuberculous spondylitis, for a year and a half or two years. These patients got well with better results than we could secure by any other method of treatment.

Dr. D'Orsay Hecht, Chicago:—I take it that this symposium was arranged for the purpose of emphasizing that there is an overlapping of the fields in which the orthopedic surgeon and neurologist work. In the brief space of time the subject has been concisely presented, but I feel that the borderline features might have been more clearly set forth and some points in differential diagnosis more definitely brought out. If there is any one thing that requires careful and clear interpretation, either from the neurologic or orthopedic standpoint, it is, in my opinion, the symptom of pain. As I meet with it in neurologic practice, I find it one of the most neglected of all the clinical manifestations. It is cursorily dealt with, little regard being held for its origin, less for its topography and none for its area of radiation. With these points disregarded, how, then, may one know whether it is a joint or a nerve pain, whether it be neuritic or arthritic? In the one instance, it has value for the orthopedist; in the other it comes within the domain of the neurologist. Failure to adequately interpret pain is, I think, as largely a sin of omission as one of commission; there is that easy tendency not to examine carefully for pain. I am impressed with this fact particularly as the

result of a fairly large experience with that very popular diagnosis of sciatica. The number of mistakes in diagnosis that are committed in the name of this particular clinical neuralgia, designated as sciatica, which blankets so many genuine lesions with underlying pathology, is simply amazing. I have in mind the cases of spondylitis that have been called lumbago, the cases of spinal cord tumor that have been called intercostal neuralgia, the cases of pachymeningitis that have been designated as rheumatism, all of them showing unmistakable somatic evidence of something more than mere neuralgic pain. The readiness and complacency with which even very careful observers diagnose sciatica is to me a reflection on good technic in physical examination. Pain as an expression of either joint or nerve disease, is of the utmost importance in delimiting the diagnosis.

As for the prevalence of arthritis associated with atrophy, Dr. Church is right in stating that this condition is many times overlooked by the general practitioner. I should say that the practitioner is much too frequently disposed to think that when atrophy ensues it is in all probability due to a poliomyelitis, a neuritis, or other trophic disturbance solely of nerve origin. It seldom occurs to him that it may follow joint disease as well, in which condition it is of significance, as Dr. Church has stated, to remember that the reflexes in the atrophic extremity are not lost, but commonly present, or even exaggerated.

Dr. H. C. Fairbrother, East St. Louis:—I wish to call attention to one point mentioned in Dr. Ridlon's paper, and that is his division of the subject of joint diseases into two broad subdivisions, rheumatic and tubercular. I wish to take exception to that division, as I would not like to have this society go on record as accepting that subdivision of joint diseases—rheumatic and tubercular—because in my opinion a large number of the joint diseases that are infectious are not tubercular. I have had many studies made for the purpose of finding the tubercle bacillus in different forms of joint diseases, but have rarely found it. On the other hand, I have found the bacilli of other infections. Speaking from the standpoint of the general practitioner, I think it is important to have this division studied down to a point. I know the accident insurance companies will agree with Dr. Ridlon that no diseases of joints are simply traumatic, but are all rheumatic or tubercular. I know they take that stand, and on that account I wish to go on record in opposition to that position, and, as I have said, I have made many studies of joint diseases with reference to the elucidation of this point. I have had many cases of joint disease, in ankles and knees, due to traumatism, to a severe wrench of the joint, with rupture of some of the ligaments, resulting in infection, and sometimes a suppurative infection, that evidently had its origin in injury.

Dr. Emil G. Beck, Chicago:—We all agree that the most modern treatment of all joint infections is immobilization, as pointed out by Dr. Ridlon, and the methods of immobilization are so well known that I shall not dwell on them. After we have failed, however, to arrest the disease, on account of the child's insufficient resistance, and it has progressed to the abscess formation, then it is the physician's duty to act at once. When we study the statistics, we will find that the mortality ten years ago from cases that went on to abscess formation was great—50 to 60 per cent.—but to-day, with our modern treatment, the mortality has been reduced to such an extent that it is almost incredible the number of lives that have been saved. Nevertheless, I come across a great many cases where abscesses were opened and drained in spite of the fact that it is considered dangerous to open a tuberculous abscess and drain it, proving that many physicians are not yet well informed on that point. Calot says in his work that the attitude of the physician toward a child which has a tuberculous abscess is of the utmost importance to its life. If you know just what to do you will probably save every joint. You can have your choice of two methods. You should keep the patient in bed; the abscess may subside of its own accord; but if you note a softening and a red surface, signs that this abscess is going to break, it is your duty to act at once and not let it break spontaneously. You must prevent that. You can use Calot's method of introducing an aspirating needle into the abscess and allowing

the material (which is not pus, by the way, but it is sterile in almost all cases) to escape, and inject a solution of naphthol-camphor and glycerin 1-5, which he claims produces the most remarkable results. A second method is to make a small incision of one-half an inch; allow the pus to escape, and introduce not more than 100 grams of a 10 per cent. bismuth paste. Of forty cases in which I have used the bismuth paste, as a modifying substance, not a single one has had a secondary infection. The secretion two days after the injection will be serous. Dr. Ridlon has used this method himself, but since his results are now less favorable than at first, I wish to say this: The first year, when the method was used at the Home for Crippled Children, under Dr. Ridlon's and Dr. Blanchard's care, I assisted them for three months, and in the first series of 24 cases there were 65 per cent. cures. But since then they have modified the method and the percentage of cures has been reduced to 25 per cent. The only suggestion I would make is that they revert to the original formula, and then probably they will get 65 per cent. cures again.

Dr. Edward H. Ochsner, Chicago:—Dr. Irons has covered the question of the bacteriology of joint infections so thoroughly that there is very little to say except this: there is a very prevalent or common opinion that staphylococcus infection of the joints is very rare, but that is not the case. Staphylococcus infection of joints simulating tuberculosis is quite common. I have myself had quite a series of cases of subacute infections of joints that were diagnosed as tubercular, from whom I was able to recover pure cultures of the different staphylococcic micro-organisms.

Dr. Ridlon has covered the question of tuberculous joints in his usual plain, lucid, straightforward manner. I wish to say a word, however, on the other type of joint affections, leaving out for a moment the etiology. If a case of non-tubercular inflammatory process of the joint, which is not nervous in origin, comes to me, I always first try to find the origin of the inflammatory process. That, after all, is the most important thing, and it is surprising in what large percentage of cases this primary focus can be found if one will take time and the trouble to look carefully and study the patient from every angle. When the primary focus is found, the thing to do is to remove it, if possible. Here, again, it is surprising to note in what percentage of cases the primary focus can be removed. If the focus cannot be found, or if found, in addition to its removal, there are three things that are usually of great importance: First, general hygiene, and this is a thing which is so often neglected by us all. Second, proper immobilization of the joint. I do not care what the cause of the infection is so long as it is an infection or an irritation. I believe that absolute rest of that extremity or joint is the second most important problem to meet. Nature teaches us that lesson. The first thing Nature does, if a joint becomes involved, becomes painful, causing rigidity of the muscles, is to make an attempt at immobilization. To be sure, that attempt on the part of Nature very often is only partial and not very effective. By establishing absolute immobilization we have fulfilled the second most important function.

Dr. John Ridlon, Chicago (closing the discussion):—I do not think Dr. Porter meant to convey to the audience the impression he conveyed to me, namely, that he treated all cases of arthritis deformans by immobilization from start to finish. I think there are some cases which require immobilization for a certain period. There are others that do not require immobilization at any period, and all cases do not require immobilization throughout their entire course.

As to the remarks made by Dr. Fairbrother, let me say that he misunderstood what I intended to convey. I am an orthopedic surgeon. I see only a limited class of cases. I do not see acute infections of joints, like gonorrheal joints and septic joints, and I do not see the sprains and injuries which the general practitioner and the general surgeon see. I meant to say, that of the cases that come to me, it was not worth my while for the time I had to speak of anything but cases of osteoarthritic joints and tuberculous joints. I would not divide all

joint affections into these two classes by any manner of means, but only those I have to deal with.

With reference to the remarks made by Dr. Beck, if I had devised so ingenious and valuable method of treatment as Dr. Beck has done, I am sure I would believe in it just as thoroughly as he does, but as I did not devise it, I have not all the love of parentage for the method. (Laughter.) I am perhaps an uncle or something like that of the method, because we took it up early, and we tried it out as we think reasonably fairly and well, and when we reported our first series of cases, we gave a percentage of cures of about 60 per cent., and now Dr. Beck rather reproaches me because I say 24 per cent., and the reason I say that number is not because of our bad treatment now, but because of our bad treatment then, some of the cases having relapsed and been made worse when we thought they were cured. To-day I do not run the risk of opening any tuberculous abscess and injecting it with Dr. Beck's paste or any other paste, as we did for a while, for I think it is dangerous. I do not inject any sinus that has opened recently, because I think it is useless and oftentimes dangerous; but in old sinuses this method of treatment is valuable.

THE IMPORTANCE OF MEDICAL ORGANIZATION IN THE DIFFUSION OF MEDICAL KNOWLEDGE AND THE PROMOTION OF ETHICAL RELATIONS AMONG PHYSICIANS *

J. WHITEFIELD SMITH, B.S., M.D.
Councilor of the Fifth District of the Illinois State Medical Society.
BLOOMINGTON, ILL.

Mr. President, and Members of the Medical Profession:

Without taking up the time of this meeting in unnecessary words of introduction, let me go at once to the heart of my subject. The subject that has been assigned me for discussion: "The Importance of Medical Organization in the Diffusion of Medical Knowledge and the Promotion of Ethical Relations among Physicians" is one worthy of our earnest consideration.

Let me ask you to go back with me in your own personal history. Let me ask you to go back with me into the history of the past in your own personal experiences. Let me ask you to go back with me to the earlier years of your life; to the day when you first crossed the threshold of the institution which you are proud to call your Alma Mater.

You were seated in the amphitheater with your eyes firmly fixed upon a group of distinguished gentlemen—the members of the faculty. You congratulated yourselves that it was your rare privilege to sit at the feet of these masters. You congratulated yourselves that it was your good fortune to be associated with the members of that body of scientific men. You congratulated yourselves for the ample opportunities afforded for studying the art and science of medicine under such an eminent corps of preceptors and instructors.

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* Read before the Brainard District Medical Society at Lincoln, Ill., April, 1909.

During the course of the prescribed curriculum you were taught and trained in the theory and practice of the medical art. You were given instruction in the various departments of medical science, and at the successful completion of the course you had attained an adequate knowledge of the various subjects, and were pronounced proficient, and were therefore authorized by the official signatures and seal of the institution to assume the duties and responsibilities laid upon you as members of your chosen profession.

Again you were informed in reference to a line of conduct that is incorporated in the code of medical ethics. You were taught professional courtesies. You were taught to recognize not only your own rights and privileges, but also those of others in the profession. You were taught that you should cultivate fellowship and friendship and encourage the social interests of your brother practitioners. You were taught to uphold the dignity and honor of the profession and to maintain ethical standards and strive to promote the interests not only of the profession, but of the welfare of the public. You were instructed in your duties to protect one another against impositions. You were warned of the dangers in all cases of unprofessional conduct, and advised to treat your colleagues with civility and respect.

You were informed that "Medicine is a liberal profession and those admitted into its ranks should found their expectations of practice upon the extent of their qualifications, not on intrigue or artifice."

Do we not see in all of this, the two essential elements of my subject, namely: "The diffusion of Medical Knowledge" and the "Promotion of Ethical Relations among Physicians"? Is not this exactly what is done by this institution, which is none other than "A Medical Organization" whose aim and purpose is the spread of scientific medical knowledge and the advancement of proper ethical medical relationships among men? I think the answers are patent to all. Every member of the medical profession is entitled to all of its privileges and immunities, only through the benefits arising from medical organization.

Now, the medical organization of our own great commonwealth—The Illinois State Medical Society—stands in practically the same relation to the profession within her borders, as the medical college does toward her graduates. We have seen what the medical institution has done for her sons and daughters, in furnishing them with the means of knowledge and attainments, and impressing upon them the precepts of morality, and in sending them forth prepared for the battles of life, or, rather for the battles of death. So, too, the state medical society is ever ready to welcome these children, the offspring of her institutions and those of sister states, and give them every kind of encouragement and assistance, to further exalt their standing, and to extend the bounds of their usefulness to mankind. How important it is, then, to the profession to have its members in affiliation with the medical organization of the county, state and nation! For, through these avenues, and through their influence, opportunity is afforded to disseminate medical knowledge, and to encour-

age the proper relationships among members, of truth, of honor, and of justice.

But these are not the only benefits that arise. Whenever physicians come to an understanding of their mutual relations, and common interests involved in their professional duties; whenever they come to fully understand and appreciate their obligations one to another; whenever they thoroughly realize their responsibilities to humanity, then they will see the importance of the spread of medical knowledge not only among themselves, but in the education of an indiscriminating public; and there are no better channels for this important work than through the "Medical Organizations" of the present day.

Again, the medical organizations of the county, state and nation stand in the same relations to the great body of physicians, that the schools, colleges and libraries of the world do to an educated people. The great libraries are our greatest universities. In them we find the best thought and intellect of every age; in them we find the combined wisdom of all nations; in them we find a consensus of opinions on all the problems that have engaged the attention of the human mind. Likewise, the medical organizations are post-graduate schools, which offer the wisest counsels, the soundest judgment, the profoundest reason and the broadest view, in every department of human knowledge, that is touched in the realm of medicine and surgery.

The importance of medical organization in dispensing knowledge and determining ethical standards is seen in the work done by medical societies in elevating and improving the standard of medical education. Along with progress in the arts and sciences, modern medicine has kept an even pace; and with the remarkable development in this particular field during the last decade, not a small part of it is due to the influence of medical societies, and the higher ideals which they have advocated and adopted. Also, the social and material interests of the profession have been widened and extended by the recognition and appreciation of these higher standards of education.

The organized medical profession is a benefactor in directing public opinion in the problems of public health and sanitary legislation. And, here again, we see the importance of medical organization in the application of medical knowledge to the enactment and enforcement of wise and just laws in the interest of the welfare of the public. It would seem that we can not lay too much stress and emphasis on the value and importance of medical organization, for just in proportion as the profession is thoroughly organized, to that same degree will it have power and strength and authority, not only to impart helpful and useful knowledge, and establish the proper relations among its own members; but to speak with authority on all medical questions and direct every policy pertaining to the public health.

The medical profession has not lived up to its opportunities and privileges, perhaps, in the matter of informing the public mind on questions pertaining to state medicine. This was due, no doubt, for the want of better medical organization throughout the state, for, coming along

with progress in this line, we note improvement and advancement on the part of the citizenship in all matters pertaining to the public health. The ends to be attained by such education are far reaching in their results. They encourage the intelligent cooperation of the laity with the profession in the suppression of disease and death in the land.

The value of medical organization is seen, again, in the comparative influence of physicians and medical societies in determining the scientific character of the profession. Medicine, in all the light of its modern phases is distinctly scientific, and its votaries are men and women of these qualifications and character, in contradistinction to an uneducated, unqualified, and unscientific coterie of laymen who, unworthily, aspire to the dignity of medical practitioners, and attempt to assume the duties of a trained and learned profession. Medical societies have for their objects the advancement of medical science, and the protection of their members and the public against such base practices. Hence, the inestimable value of medical organization in its influence of determining and maintaining the scientific character of its members, and of protecting its members and the public against such unjust impositions, can only be appreciated when we make a comparative study of the conditions as they actually exist.

That there is a great work before the profession to-day in bringing about some needed reforms, and in protecting the people against the hollow shams and mockeries that are being perpetrated upon a credulous public by the charlatanism of the day cannot be questioned. The medical organization, through its influence in disseminating medical knowledge and upholding ethical relations among its members, is the only way that these reforms can be brought about.

It was truly said in the bygone days of the last century by a well known educator that, "We must educate or we must perish." And this certainly applies to the conditions of the present century. Because of the toleration and the indifference on the part of the profession, because of our failure to properly educate the public mind, because of the lack of close professional ties, stronger bonds of fellowship, and broader sympathies among ourselves, we have seen spring up all around us unreasonable pretenders, irresponsible cults and irrational systems that have deceived the indiscriminating public by their sophistry and unwarrantable pretensions to skill.

There is but one way of entrance into the medical profession. There is but one avenue of approach to the legal profession, or the profession of the ministry. If any one desires to practice any phase of medicine, let him first qualify the same as every physician has done, and receive the doctor's degree in evidence of such qualifications from a reputable medical college authorized by law to confer such degrees. Then if he prefers to practice some side line, or pursue some phantom, or indulge in practicing some delusion, before the eyes of an informed and enlightened public on this subject it would not seem quite so inconsistent and reprehensible. It is evident that if all were made to conform to the medical requirements

and standards, no one would want to engage in the practice of these vagaries.

The fallacy lies in this: that these pseudo-systems take up a postulatory theory of medicine, and upon this mere assumption they attempt to formulate a rational system. Or, perhaps, they will take some abstract proposition in medicine, and from this single attribute they will try to evolve a system universal in its application.

In view of all this, I desire to lay special stress and emphasis on the possibilities of medical organization. Whenever the medical profession becomes thoroughly organized, whenever the men and women who are practicing legitimate medicine and surgery will give some of their time and talents in the interest of a closer affiliation, whenever the medical profession rises up as one man in the defense of their wrongs and in the demands of their rights, then, and not till then, will the profession triumph and be restored to its place of honor and esteem in the minds of a grateful people. Then will these "irregular" and "irrational" systems become at once obsolete, only to be remembered for their sophistry and guile. Then will the public discriminate between true men of scientific attainments, and those whose only presumptive evidence of professional ability lies in the display columns of the public press.

The importance of medical organization in the diffusion of medical knowledge, and the promotion of ethical relations among physicians, can never be estimated till the rank and file of the profession shall be united into one brotherhood, by kindred ties, and common aims and purposes in life. Then will the profession have power, and prestige, and preferment. Then shall this tide of deception that has swept over our land—this wave of imposition, with its half-truths, distorted truths, and its utter lack of truth—be rolled back, and the public mind that has been beclouded by these fallacies shall see in the light of a purer reason and a clearer view, what the medical profession through its scholarly attainments and scientific achievements has done for humanity, in alleviating her suffering, curing her ills, and in lengthening human life. Then shall the nations of the earth cry out in a single voice, shouting the praises of our profession. Then shall the nations of the earth vie with each other in doing homage to our profession. Then shall the nations of the earth rise up and call the medical profession blessed.

GASTRO-INTESTINAL DISORDERS OF INFANCY AND EARLY CHILDHOOD *

J. W. VAN DERSLICE, M.D.

CHICAGO

The disorders of the gastro-intestinal tract of early life form a class of patients with which the physician comes constantly in contact. It is perhaps customary to speak of these disorders as summer complaints;

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but it is the experience of every practitioner that in winter as well as summer these cases form a considerable proportion of his cases. It is in the crowded centers of population that these occur more frequently. Here also are found the aggravated forms of the disorder. In the more isolated homes the cases are more amenable to treatment. This is perhaps in part because the patients are earlier brought to the attention of the physician and to the better hygiene that it is possible to maintain in the better class of homes.

There is a growing sentiment among pediatricians that these disorders are far less common than formerly. In the author's clinic the disorders of the digestive tract amounted to but 25 per cent. of all cases appearing during the summer of 1909. The health departments of the large cities show a decided decrease in the mortality during the first year of life during the heated term. This improvement is directly traceable to the publicity of the simpler rules of hygiene which have been sent broadcast by the various health authorities and charitable organizations. This has brought a demand for better and cleaner milk. There is now supplied in most of the large cities certified milk of a definite chemical formula and a bacteria count of less than 10,000. The prime etiologic factor is the ingestion of improper food; this may be improper as to quality, quantity, frequency of ingestion, physical condition of the food, or to its mode of preparation. Just at this time when the medical profession is having a profusion of infant-feeding fads bearing the brand of "Made in Germany" thrust upon them, it may be pertinent to enquire "What is the proper feeding of infants?" To this there can be but one answer: when possible mother's milk; when necessary to give an artificial diet it must conform to certain definite essentials. These essentials as given in Cotton's Diseases of Infancy and Childhood are:

1. The food must contain the different elements in about the same proportions as found in human milk, viz., proteids, 1 to 2 per cent.; fats, 3 to 4 per cent.; carbohydrates, 6 to 7 per cent.; salts, 2/10 per cent.; water, 88 per cent. This represents theoretically the ideal for a balanced nutrition. The chemist can readily produce a mixture which duplicates breast-milk in the nutritive value of its constituents and even resembles somewhat closely that emulsion in its physical appearance, but the dismal array of failures to reproduce mothers' milk by a synthetic arrangement of apparently similar constituents obtained from other sources, is an emphatic reminder of the limitations of both chemical and physiologic knowledge.

2. It should not be purely vegetable, but must contain a large proportion of animal matter. Most vegetable substances are deficient in available proteids and yield but a small quantity of fat. Moreover, it is known that the infant does not assimilate them as easily and fully as those derived from animal sources, even though these ingredients be supplied in the proper percentages.

3. It must be in a form suitable to infantile digestion. The digestive organs have only recently assumed their functions and are designed to deal solely with the bland, dilute and easily dissolved nutriment of mother's milk. In the natural method of feeding the infant gets his nourishment in the same form at every meal; so in artificial feeding variety is not desirable. It is presumed that infants under six months are unable to digest much starch from the paucity of ptyalin and amylopsin; hence, for this age any great amount of starch in a food is enough to condemn it. As the walls of the stomach are lacking in muscular power and the secretions are feeble, it is evident that this organ is unable to deal with

large masses of solid matter. Solids can be digested only in a state of minute subdivision.

4. The total quantity in twenty-four hours must represent the equivalent, in nutritive value, of from one to three pints of human milk, according to the infant's age. No fixed rule can be given for all children. Careful observation of the infant as to whether he rejects some of his food soon after ingestion, or seems hungry half an hour after feeding, may prove a guide. The best indication that he is receiving his full equivalent is a steady weekly gain of from two to five ounces, or more in the early months.

5. It must possess the antiscorbutic property. It is not yet known in what this consists. It is known that infants at the breast very rarely suffer from scurvy and that the disease is found among those fed on condensed or sterilized milk, or on desiccated preparations. Prompt recovery, with food unchanged (except the discontinuance of sterilization), has been reported by several observers. Fresh milk, therefore, possesses, in addition to the important principles, this antiscrobutic element, but not in large proportion, for milk in extreme dilution will not prevent the development of this disease.

6. It must be fresh, clean and free from excessive bacterial content. Hydrochloric acid has antiseptic properties, it is true, but the stomach secretes only a limited quantity of it during the first half year. Hence, infants are extremely susceptible to gastro-enteric disorders, having little resistance to bacterial invasion. The deadly toxins which develop in old milk may resist all efforts at sterilization.

What rôle do the elements play as etiologic factors in these disorders? There have been volumes written upon the effect of hot weather, how it lowers the vitality of the child, lessening its resistance, or how atmospheric conditions favor the development of bacteria harmful to the host. Be this as it may, it is the constant clinical experience to find that a few hot humid days greatly increase the number and severity of these conditions. In the literature, teething has also taken a prominent part as a factor in the etiology and the discussions still wage pro and con. That teething, by the constant irritation of the gums, does act as an important etiologic factor in many of these cases, there can be little doubt. Sudden changes in the temperature, either from heat to cold or cold to heat, have an important influence in the number of cases.

During the past few years there has been done an enormous amount of valuable scientific research work in the bacteriology of these diseases by Booker, Flexner, Duval, Bassett, Weaver and Cook, which gives promise of much light upon the subject; but as yet their results must be considered in the experimental stages.

The diagnosis must, as yet, be made anatomically, according to the region most involved; admitting, however, that symptomatically it is impossible to always differentiate between the various forms of summer complaint. One point brought out by Dr. Cotton in the *International Clinics* (Vol. II, Series 13) which throws much light upon many of these cases is that "the systemic disturbance which seems to be an expression of intoxication from the stomach and bowels varies widely as the diarrheal disorder locates with greater or less intensity upon this or that portion of the digestive tract. Apparently systemic disturbance diminishes proportionately with the distance from the stomach at which the burden of the disorder seems to fall. Thus in the most obstinate cases of colitis

with extensive lesions of the mucosa, nutrition is maintained to a remarkable degree, the child showing but little evidence of systemic intoxication, whereas a much less obstinate disorder of the small intestine may cause prostration with symptoms of general collapse. In other words, the more active the digestive area involved the more profound the constitutional disturbance and the greater the tendency to collapse."

A careful scrutiny of the bowel movements will show much light upon the conditions existing within the intestine. In all cases of diarrhea a large percentage of the bowel movements will show some mucus. The amount and constancy is a guide to the extent of the lesion. Mucus in large amounts may be found in all the movements of certain cases without an intestinal lesion; but in such cases there is usually a history of previous attacks and large quantities of mucus.

J. H. Mason Knox, in an article, "Character of Stools with Reference to the Intestinal Findings in the Diarrheal Affections of Infants," gives the following summary:

1. Mucus is evident to the naked eye in a large percentage of the diarrheal stools of infancy. Its absence renders the presence of serious intestinal lesion improbable. Mucus in large amounts may be found in the stools in all intestinal disorders, but the proportion of cases with extensive intestinal alteration is greater when the quantity of mucus is in considerable excess.

2. The appearance of blood in the diarrheal dejecta of infants suggests an alteration of the intestinal mucosa in proportion to the amount of blood present. On the other hand, extensive changes may occur in the bowel wall without the microscopic presence of blood in the discharges.

3. In like manner the presence of pus in the diarrheal stools of infants indicates, according to the quantity, alteration in the mucosa, particularly in that of the large bowel. The failure, however, to detect pus in the stools with the naked eye does not preclude the possibility of extensive intestinal lesion.

4. Blood and pus are more frequently found in the diarrheal movements in the middle half of infancy and these elements at this time form a correspondingly more reliable index of the conditions of the intestinal mucosa.

5. Blood and pus rarely appear in the diarrheal discharges of infancy before the beginning of the second week of their illness. They are more frequently found from the third to the sixth or eighth week, and are usually absent after that period, when the illness, if it continues, may assume a marantic character.

6. Blood and pus are often found mingled in the same stool. Less often blood appears alone, and still less frequently is pus noted in the dejecta of infants who have not passed blood.

The presence of these elements indicates the probability of thickening and infiltration or of ulceration of the mucosa of the small, but more certainly of the large intestine.

The classification as used in the author's clinic embraces the terms acute and chronic intestinal indigestion, gastro-enteritis, entero-colitis, acute ileo-colitis, simple colitis, cholera infantum, and amebic ileo-colitis.

Acute Intestinal Indigestion.—In these cases the onset may be either sudden or gradual. In cases with gradual onset the child is fretful or peevish for a day or two, awakening from a restless sleep with a sharp cry, often in terror, clinging to the mother as though frightened by a dream. This continues, with a gradual rise of temperature to 100 degrees

or 101 degrees, increased restlessness and peevishness, until the diarrhea unloads the intestine.

In cases with a sudden onset there is usually some gastric disturbance. The patient develops acute colicky pains, a rapid rise in temperature to from 103 degrees to 105 degrees, with a weak rapid pulse, marked prostration; the facies is that of a grave disorder. The pain is expressed by sharp, piercing cries, great restlessness, drawing up of the legs; or we may have as a first symptom a general convulsion that may be repeated at intervals. The cases in which convulsions appear are those usually of a neurotic heredity, or showing gross rachitic changes. The diarrhea soon follows, the bowel movements containing at first large amounts of fecal matter; the amount of fecal matter is sometimes enormous, especially so in artificially-fed children. The proportion of fecal matter to fluid becomes less and less as the diarrhea continues, becoming almost fluid in a few hours. There are usually four to twelve movements in twenty-four hours. These are first yellow, then yellowish green, then grass green in color, the change in color being due to biliverdin; their reaction is acid, of a foul or sour odor, the bowel movement containing undigested food, as curds of casein, lumps of fat, unchanged particles of starch, mucus, epithelial cells of cylindrical variety, and the bacteria usually found in feces.

The course and prognosis of these cases depends largely upon the previous condition of the child and the exciting cause. Usually upon unloading the bowel there is a gradual cessation of the symptoms, and convalescence takes place in a few days, if a rational diet is adhered to.

Chronic Intestinal Indigestion.—The chronic type of indigestion is usually preceded by a number of acute attacks. Many of the cases of acute intestinal indigestion occurring in the early summer develop a chronic condition which continues until the settled cold weather, regardless of the treatment. In these cases the stools are persistently abnormal, both as to character and frequency. The bowel movements are not very numerous, from four to six in twenty-four hours. They are large, thin, of a gray-green or brown color, of a disagreeable odor, persistently containing undigested food, and expelled with large amounts of flatus.

The bowel movements are usually passed without much pain; the stools are acid, irritating to the skin, and there is usually developed a marked intertrigo with excoriations; the appetite is capricious, the patient is thin, pale and anemic; there is often a constant decrease in the weight, in others there is a slight increase at times. The child is cross, hard to amuse, the sleep is restless, the child constantly tossing about, gritting the teeth and frequently crying out. The temperature is often subnormal, the surface cool, the tongue constantly coated, and the abdomen protuberant. These cases persist, with now and then an acute exacerbation, for months. In many cases the emaciation is extreme—the child literally starving to death.

Gastro-enteritis.—These include the great number of summer diarrheas of infancy, the so-called fermentative diarrheas. The onset in these cases usually follows an attack of acute intestinal indigestion. Remem-

bering that in acute intestinal indigestion we have, not a disease of the bowel, but a poisoning process going on in the bowel. We have the best of culture media in cows' milk at the body temperature, so that there rapidly develop micro-organisms which partly cause this condition. These cases begin with either a gradual or a sudden onset, the milder cases beginning with a gradual onset. For the first few days there are no symptoms other than those of an ordinary intestinal indigestion. These are the so-called "teething" diarrheas. The stools, however, become more and more frequent; they are thin, persistently green or tinged with green; their odor is foul or sour, the variation in odor being due to the diet, the albuminous decomposition making a foul odor and the fermentation of starch causing the sour odor. Mucus is present in increasing amount; the appetite is usually impaired, but a condition of great thirst exists, due to the rapid loss of water. The mother or nurse frequently misin terprets this thirst for hunger and puts the child frequently to the breast, thus adding to an already impaired digestion more food which acts as a foreign body, adding more fuel to the flame.

The tongue is coated, the mucous membrane of the mouth congested and covered with aphthous patches. The cases of sudden onset often begin with a convulsion; there is great restlessness; the prostration is great; far greater than that in cases of gradual onset; there is an early, rapid rise of temperature, often reaching 104 degrees or 105 degrees in a few hours. The skin is hot and dry, the fontanelle depressed, pulse rapid and weak; the patient lies in a dull stupor, or there may be great restlessness—all the symptoms indicating the onset of some serious disorder. Within a few hours there is vomiting, then diarrhea.

The diarrhea is explosive; the stools have a great amount of flatus, and number from twenty to thirty in twenty-four hours. The stools are yellowish gray or green or mixed in color. The clinical difference most manifest between gastro-enteritis and acute intestinal indigestion being in the persistence of the colicky pains, the amount of gas, the foul odor, the number of bowel movements, and the great amount of mucus, the microscope showing all the conditions found in acute intestinal indigestion with putrefactive bacteria. These cases always show marked nervous symptoms early, which often subside with the unloading of the bowel, this condition persisting for from five days to a week. In these cases which persist in the acute type for more than a week, there will usually develop meningeal symptoms, when convulsions may be frequent and a retracted or "bed-pan" abdomen may be found. In other cases there is marked tympanites. There is an early rapid loss of weight sometimes reaching two pounds in twenty-four hours.

Acute Ileo-colitis, Dysentery.—This usually follows entero-colitis, but may develop rapidly. The onset is acute. There is a high temperature, rapid pulse, rapid loss of weight and strength; the bowel movements from ten to twenty per day. There is marked tenesmus both before, during and following the bowel movement: A constant straining to have a bowel movement. The discharges contain mucus, blood, shreds, and sometimes pus. The bowel movements often assume a jelly-like consistency. There

is very little odor; the color and consistency are variable. The abdomen is distended, tympanitic, often tender, and prolapse of the anus is common, the discharges causing intertrigo of buttocks and thighs. The number of cases in which a bacillus resembling the Shiga bacillus is found varies greatly in different parts of the country. The bacillus is commonly found on the Atlantic Coast, but in the interior it has not been so frequently demonstrated. A prominent symptom is abdominal pain. The duration is variable; the blood usually disappears from the stools in about a week. With the disappearance of blood from the stools there is usually a gradual change for the better, the bowel movements become lessened in number, and a general clearing up of all symptoms, except for the appearance of the mucus in the stools which persists for an indefinite time. The temperature chart shows a gradual lysis from the second day.

Cholera Infantum.—The onset of cholera infantum usually follows some form of digestive disturbance. After a variable period of restlessness the infant begins to vomit, the vomiting being accompanied by a profuse diarrhea. The vomitus and bowel movements are watery; they are odorless, and consist of serum, epithelial cells and bacteria. It may run its course in twenty-four or forty-eight hours, death supervening. The rectal temperature is high, the extremities cold, the skin cyanotic, the face pinched, the pulse weak and rapid, respiration shallow, or may take on a Cheyne-Stokes type. Thirst is one of the prominent symptoms; the abdomen is soft, usually retracted; the eyes sunken; loss of weight rapid and extreme; the nervous symptoms are grave, the child lying constantly moaning, with continual rolling of the head. The child may lie in a stupor with relaxation of all the muscles, the sphincter often being relaxed so that there is a constant oozing from the anus. These symptoms go on to coma or convulsions, respiration becomes weaker and irregular, finally almost imperceptible; very little urine is passed on account of the great amount of water lost through the bowel movements. This seems to be a self-limited disease. For children surviving seventy-two to ninety-six hours, the prognosis is fair. There is apparent a manifest tendency to diagnose any severe case of summer diarrhea in infancy as cholera infantum. This is to be deprecated, as in cholera infantum we have a definite clinical picture that is only too clearly differentiated from the other types. Where a careful diagnosis is made, the cases of cholera infantum are exceedingly rare, many of our most competent observers reporting that they have never seen more than one or two cases.

Amebic Ileo-colitis.—This form of ileo-colitis is very rare in children. The duration is very chronic. The diagnosis can only be made by the microscope.

Entero-colitis.—The term entero-colitis is used to designate the class of cases which have a corresponding symptomatology as gastro-enteritis, except that there is no recurrence of the vomiting.

Simple Colitis.—Simple colitis is used to designate those cases simulating the acute ileo-colitis, with very frequent small inoffensive stools which may be evacuated after considerable straining in small amounts,

perhaps not more than a drachm. These cases are subacute, and usually follow an acute indigestion; they tend to a protracted course with little emaciation, have a low temperature chart and the vitality is maintained to a remarkable degree.

Treatment.—These are preventable diseases. The proper treatment is in the prevention of the condition. That it is possible to prevent all of such diseases is beyond the imagination of the most sanguine. The lack of fresh air and sunshine in the poor districts should be supplied by the building of model tenements. That the large majority of these cases occur among the artificially-fed children should give emphasis to the necessity for mothers to nurse their offspring. The tendency of the physician to feel that it is possible to properly nourish these children with other than the natural aliment has been, and is, a great factor in the number of babies that are deprived of their proper food. There should be the same care exercised to modify the mother to make her capable of suckling her child as is used in the selection of an inferior food. It is not probable that every mother is capable of nursing her infant, but it is a fact that a great number of mothers are encouraged by the physician's attitude to wean their babes, when a little timely advice would supply the babes with their inheritance by right. Mother's milk is the best food for babies. There is no other food that can take the place of it. Every child fed upon artificial food shows one or more signs of rickets. It is notorious that all artificially-fed children are prone to diseases of the digestive tract.

The hygiene of infancy is neglected. The mother is not instructed in the simplest rules of hygiene. Through ignorance they do not protect the child from contaminations that may be of harm to the child. The need of boiling and airing the napkins; the removal of soiled clothes from the living apartments as soon as soiled; the harm of drying wet napkins over the kitchen range. That instinct is not a safe guide in the care of infants by their mothers is true, regardless of analogy with the lower animals. Irregularity of feeding is a prolific cause. The physiologic law that any function must have an interval of rest after exercise must be obeyed in the feeding of infants as well as in other conditions. Children are naturally gluttons, and all articles handled by them are usually brought to the mouth, so ordinary care should be taken to see that playthings are as sterile as possible. The persons of the children should be kept clean. There is no contraindication to the daily bath. In the crowded centers the children should be taken to the country when possible during the heated term, or should have the benefit of frequent outings in the parks. If these trips are impossible the baby should be kept in the open air as much of the day as possible, avoiding only the direct rays of the sun. The amount of food taken should be diminished; regularity of feeding insisted upon. This is true of the naturally as well as the artificially-fed child. Breast-fed children should not be weaned during the summer except for causes which make it imperative to wean.

Fruit is a frequently-assigned cause as the exciting factor in acute indigestion. The fruit sold in these districts is usually unwholesome.

The banana is more commonly given to the child because it is cheap, easy to prepare, and is considered a good food. The use of the banana should be restricted to children of six years and older. This is because of the manner of eating; the child does not masticate, but simply breaks off a piece and swallows it. The musculature of the stomach is not sufficiently developed to enable it to break up this mass and mix it with the digestive juices. Older infants and young children may be given bananas if they are first pressed through a fruit sieve.

Pure, fresh cow's milk is the greatest desideratum of the city child. Every effort should be made to supply the child with a wholesome milk. It has been amply demonstrated in several cities that it is practical to have a good quality of milk supplied by the dairymen. The physicians of every community should see that there is a reliable milk on the market. This has been done in many communities by the organization of a milk commission.

Two agencies that should have the unqualified support of every physician are:

1. The supplying of infants with a guaranteed cow's milk.

2. A well-regulated wet-nurse establishment.

In the treatment of summer diarrheas there appear five indications:

1. Stop all food.

2. Remove the cause.

3. Rest the affected part.

4. Allay thirst by giving cold water in small amounts at frequent intervals.

5. Keep the surface temperature as nearly normal as possible—where the skin is cool, apply heat; to a hot, dry skin, cool sponging. Stop all food for twenty-four hours or longer. This is indicated in all cases, regardless of the apparent mildness of the emaciation or exhaustion of the patient. During this twenty-four hours give copious amounts of cold water. A weak cereal solution may take the place of plain water where it is difficult to have all food stopped. The initial medicinal treatment is one-tenth grain doses of calomel given every hour for six doses, followed by a drachm dose of castor oil. This should be enough to practically empty the stomach and small intestine. Where it is possible to have the instructions intelligently followed, colonic flushing is ordered. The instructions given to the mother are, the child to lie on the mother's lap or bed, with legs and thighs flexed. A No. 14 French soft rubber catheter is attached to a fountain syringe; the catheter is well oiled with warm sweet oil, and inserted about one inch into the rectum, when the water is turned on. The catheter is then to be wormed into the gut. The fountain of the syringe should never be more than two feet higher than the buttocks of the child. The injection ordinarily used is tepid, but in competent hands the temperature may be lowered to reduce hyperpyrexia; this can only be recommended when the flushing is done by competent observers. Plain sterile water may be used, but in many cases there is an advantage in the use of weak alkaline or of normal saline solutions. The

amount used for each injection is from two to six pints, or sufficient to cleanse the bowel so that only clear water returns. Following the initial medicinal treatment it is advisable to use a laxative for a few days; for this, the aromatic syrup of rhubarb is frequently indicated, because of the so-called after-constipating effect of the contained tannic acid; the aromatics are antiseptic and the drug is usually well borne. The giving of large doses of bismuth preparations should not be done as routine treatment; it is only in marked hyperperistalsis, or in repeated vomiting, that the indication for use of bismuth salts is met. The coating of the gastric mucous membrane with bismuth occludes the peptic glands, and where the gastric secretion is already impaired their use but further interferes with digestion. After the first twenty-four hours a thin gruel or an egg-albumin solution may be given. These must be given in small amounts, and the amounts slowly increased as the ability to digest increases. We err most frequently by over-feeding. We must make haste slowly. The diet during the continuance of the diarrhea consists of dilute rice, barley, or oatmeal gruels, expressed beef juice, raw eggs, broths (preferably containing cereal), bacon fat and baked potatoes. It is best to omit milk from the diet as long as the diarrhea continues. In feeding during this interval it is imperative that the food value of the foods taken be known. It is quite possible to give an insufficient amount as well as an over amount at such a time. To guard against this the cereal and albumin solutions should have fixed proportions that their value may be known. Broths have no nutritive value except by the addition of a cereal. In the restoring of a milk diet, the milk must be added gradually to the diet, and it is often advantageous to digest or partially digest the milk for a few days—gradually reducing the length of time the peptonizing process is carried on—this decrease from day to day, as the child's ability to digest increases. It is usually possible to stop the peptonizing by the end of the week. In breast-fed children there is an earlier return to milk, but the process should be gradual, giving the breast for but a few minutes and gauging the length of the interval by the ability to retain the milk.

The use of alcohol and opium may be necessary at times. They should never be used as routine practice. The indication for the use of opium is not in the frequency of the bowel movements, but in the pain and tenesmus, and should be given as a high colonic injection of one minim in an ounce or two of starch water for a child one year of age.

The pain and tenesmus can usually be controlled by the use of carminatives and local heat, or a thin mustard paste, made with the white of egg.

The use of intestinal antiseptics is usually not indicated, and is frequently harmful by being irritating to the mucous membrane of the *prima via*.

DISCUSSION

DR. EMERSON M. BREWER, Rantoul: I have only a few words to say in regard to the gastrointestinal disturbances of children. We had in the neighborhood of Rantoul last fall, as you possibly remember, an epidemic of poliomyelitis following intestinal disturbances. I fortunately or unfortunately was in the midst of this epidemic. I had myself fourteen cases out of the twenty-seven or

twenty-eight we had in the district reaching from Potomac, Illinois, to Leroy. Invariably in all of these cases the digestion and alimentary tract were more or less affected before the poliomyelitis came on, and in discussing this matter pro and con with the state board of health, which sent representatives there to look after this epidemic, we agreed in general that the epidemic was due more or less to intestinal disturbances, created more possibly by infection taken into the stomach and bowels than by anything else. The ages of the children ranged from six weeks, the youngest, to fourteen years of age, the oldest. Among the children, some had paralysis, while others did not have it. Invariably in all these cases we had infection of the bowel; we had catarrhal conditions of the stomach and bowel, like diarrhea, sometimes followed by constipation, but invariably constipation and indigestion. The trouble came on in the first case on the fourth day of July; the last one in the latter part of September or maybe October. Of the fourteen cases I had all recovered except one, which is paralyzed at present.

DR. H. W. CHENEY, Chicago: I desire to emphasize one of the points which Dr. Van Derslice brought out in his paper, and that is the question of over-feeding as a potent cause for the gastrointestinal diseases of children. By that I mean the ingestion or giving to these children more food than they need or more than they ought to have. I think we will find, as we study these cases more, that over-feeding perhaps is as much a cause as is the feeding of sour milk or milk that has been infected or feeding them on other improper food. These children may go along all right on a proper mixture of whole milk, which is the right strength for them, and yet they may be receiving too much food to gain in weight. If we follow the rule of some of the German investigators, we will not feed these babies under six months more than forty-five calories per pound, and we will find that the weight of the child is a better criterion to go by than the age of the child. We may have a child a year old who weighs only eight pounds, yet if we feed the child according to the year-old formulas we will fall into the error of making the child sick on proper food, because over-feeding will poison the child as quickly as to feed it infected food. That is one of the reasons, too, why the intestinal diseases are more frequent in the hot days because these children do not need so much of the heat-forming elements. They do not need so many calories in the food and during the hot days in summer the trouble is not always due to souring of the milk, but to the fact that we feed these children more than they need and more than they can take. We cure them by stopping the food or by reducing the number of calories they have been getting. If we manage these cases properly they will need very little medicine after the initial dose of castor oil or other laxative. Give that dose in the beginning; give barley water for twenty-four hours and gradually go back to the proper mixture.

DR. J. W. VAN DERSLICE, Oak Park (closing the discussion): The report of the epidemic is exceedingly interesting. The severe epidemics which have occurred in this country during the past few years have left a decided impression that this is a specific infectious disease. This has been brought out during the Nebraska epidemic, where the complete isolation of all the patients had the effect of stopping the epidemic immediately.

In reference to the use of caloric feeding it is necessary to remember that the mensuration of food by means of calories is merely to be used as a check against both over- and under-feeding. The adherents to this method have said that you must not feed more than forty-five calories to the pound of the body-weight, that interpreted into ounces means that one must not give more than two and a quarter ounces of good breast or bovine milk to each pound of body weight in twenty-four hours. I can in the main agree with this as it is but rarely that one can find an infant that will take this amount per day. I am not an exponent of the popular fad of overfeeding as the common cause of all our digestive troubles during infancy. In my experience the child that is brought to the physician for these various disorders is usually fed on some mixture or other which, when measured up into calories, it is found that it would be neces-

sary to feed the child gallons of the same before the limit of 45 calories per pound would be reached. If we take a normal-weight baby at six months of age, this infant weighs about 16 pounds, that would give as the maximum amount of food 36 ounces of pure cow's milk in the twenty-four hours or six feedings of 6 ounces each, which one can readily see is about the same standard that has been used for generations before the importation of the latest German method. I do not wish to be understood as opposing overfeeding as a cause for indigestion as there is no doubt a definite clinical picture which we find in some infants which is entirely due to this cause. But I do maintain that the great majority of our cases are found in the underfed, rather than the overfed. How many of these cases have each of us seen where the child is brought in on the end of a long tube-bottle and find the child is being given one or two teaspoons of condensed milk, diluted with 6 or 8 ounces of water. That to me is the more typical case. Most of us were graduated before the caloric method of feeding came into vogue and by reason of this we are not adepts at transposing food values into calories, but few general practitioners know the food value of any of the foods which are given. Children are fed arbitrarily and for this reason the caloric method is a distinct advance as the doctor is now taught the theoretical food value and can measure up the values in a given food far better than formerly. I would leave this word with you: Learn the food value of the few foods which you are commonly using and only use a few foods, but learn their definite use and limitations.

SKULL FRACTURE *

F. C. SCHURMEIER, M.S., M.D.
ELGIN, ILL.

The purpose of this paper is not to discuss the different kinds of skull fracture; the various kinds of intracranial lesions caused by them, and their treatment; but rather some points which the cases I desire to report bring into question.

Out of a series of ten cases that have come under my observation in practice, I desire to report a few that appealed to me as being of interest. Excepting a few pioneers in this field, surgery of the skull has until recent years been looked on with grave apprehensions. The fear of jeopardizing life had so fastened itself on the surgeons generally, that the cranium with its contents was regarded a *noli me tangere* in its literal sense. The reasons for this apparent timidity among the rank and file we need not seek far to find. Time and space forbid their discussion here. Indeed trephining in a crude way was practiced in prehistoric times as a sort of panacea for those supposed to be possessed of the evil spirit. Although historically interesting, and at times entertaining, especially when depicted by the pen of the novelist, the scientific mind finds little comfort in the early traditions, which betray little anatomic and physiologic knowledge of this and correlated subjects.

Skull fracture, however, seems to have been a bone of contention for centuries back of the recent past. The pendulum has later swung several times back and forth between ultra conservatism and the radical treat-

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ment of skull fracture. The advent of asepsis and antisepsis has opened new vistas for surgical possibilities, for it was not until then that surgical thought was effectively directed to acquire scientific acumen for the interpretation of pathologic phenomena, and to determine the proper antidote. Surgery had a new birth, and with it came inspiration for the betterment of this heretofore chaotic and uninviting field of surgical endeavor.

Diagnosis: As a general proposition, it is doubtless correct that clinically hemorrhage elsewhere in the body permits of no comparison with intracranial bleeding, because in the latter we observe indirect effects, whereas hemorrhage in an open and dilatable space gives the symptoms directly referable to the initial cause. Usually the loss of blood in skull fracture is insignificant, but the mischief done by pressure of even a few drops of blood is sometimes considerable and not infrequently fatal. Symptoms of skull fracture may not be pronounced, save in the terminal aspect. Indeed so slow may be the development of pressure signs, that the suspicion of hemorrhage would arise but late. Permit me to report the following case in point:

CASE 1.—H. S., male, aged 45 years, laborer, while walking home from work, fell, striking his head on a stone curbing. Conscious, but feeling a trifle dizzy, he refused assistance from his fellow-workmen, but consulted a near-by doctor, and then walked home, a distance of eight city blocks. He complained to his mother of headache and slight visual disturbance, but objected to her calling in a surgeon. He sat at the table to eat his lunch, which he seemed to relish as usual. Following his usual custom, he conversed a long while with his mother, who, however, was ill at ease because of her son's peculiar breathing. She enjoined him to call a doctor. He again objected, stating that he had seen a doctor, who advised him to go home and "sleep it off," an advice based on the erroneous conclusion that because the patient had liquor on his breath he had probably worshipped too freely at the altar of Bacchus. I saw the patient about three hours after the accident. He was lying on his bed, unconscious, pulse 60, respiration stertorous, left pupil dilated. His mother stated that about ten minutes before my arrival patient was conscious and drank some water. Removing a gauze dressing from his head, I discovered a perforated scalp wound, the size of a dime, over the right lower temporal ridge, slightly bleeding. I diagnosed skull fracture and ordered patient removed to a hospital, but life expired a few moments later.

The case came to autopsy with the following findings: Scalp wound as already described; fracture line began 2 inches from point of contact, extending toward the juncture of lambdoid with sagittal suture, following left lambdoid suture a short distance, then crossing into occipital bone, ending behind the mastoid. The lateral sinus was injured. A large epidural clot below fracture line in left posterior fossa.

Points of interest: Mistaken diagnosis. Patient was conscious until shortly before death; walked a long distance after the accident; fracture line far removed from point of contact. From the post-mortem findings it seems that if the true condition had been recognized, an early surgical attempt to save the patient's life might have been successful.

The absence of motor disturbance and the fact that locomotion is possible during active intracranial hemorrhage serve only to deceive. They have little negative diagnostic value in the early hours after the injury. Loss of consciousness, if the time of its advent is known, is probably the most valuable single sign. If in a few moments conscious-

ness is regained, only to relapse into unconsciousness or coma, we have the unmistakable sign of hemorrhage. Unconsciousness from concussion is immediate. When consciousness is regained, there is no relapse. Complete coma points to basilar fracture. Causes of partial or total unconsciousness or coma, other than pressure and cerebral shock, such as alcoholic and uremic coma, apoplexy and opium poisoning, need only be mentioned here. However, be it said that the odor of alcohol on patient's breath has led to error temporarily, and I have witnessed it several times myself, while serving in the capacity of city physician. In coma from alcohol pupils are equal, irritation on the face causes pupils to dilate and contract rather quickly in succession. There is no paralysis. Apoplexy may cause some difficulty in diagnosis. Here we have the slow pulse, irregular breathing, and complete coma with paralysis. Marks of violence are generally absent.

Fracture of the petrous portion of the temporal bone may cause bleeding from the ear if the drum is ruptured or from the corresponding side of the nasopharynx through the Eustachian tube. Fracture involving the frontal sinus and not extending into the base may cause hemorrhage from nostril, but will issue from beneath the middle turbinate through the infundibulum. I believe this to be of sufficient importance to merit close inspection to find the source of the nasal hemorrhage, for it may be of some value in pointing out the difference between a basilar and a non-basilar fracture, in cases where the nose is the only visible point of bleeding. In one of the cases which I shall report did this condition obtain. In lesions of brain centers, we expect disturbance of function in the side opposite to the injury. Where there is fracture of the vault with paralysis on the same side, then there is a basilar lesion, probably by extension.

For the history of the following case I am indebted to my colleague, Dr. Tobin, with whom I saw the patient shortly after the injury. Patient, a girl, age 8 years, while in an accident sustained a blow to the forehead. Patient was unconscious, hemorrhage from the left nostril, a substance having the appearance of brain matter issued from the nose; a slight bruise on the forehead to the left of the median line; left pupil dilated; left-sided hemiplegia developing on the second day; temperature irregular, between 99 and 100.2; pulse irregular, 92 to 108; convulsions lasting one-half hour soon after injury; incontinence.

Operation.—Trephine over frontal bone near site of contact; considerable diploic hemorrhage, controlled by pressure; fracture line extending toward left eyebrow and to the frontal sinus; slight depression of inner table at point of contact. Button was not replaced, and a catgut drain placed subdurally. The paralysis gradually cleared up, consciousness was not complete until end of second week; sphincter control was not regained until twelfth day. Patient made a good recovery.

In this case we note the late development of paralysis on the same side as the injury, indicating pressure from hemorrhage at the base, the clot being slowly absorbed, as the gradual disappearance of the hemiplegia indicated.

Abrasion and swelling on the scalp are significant and in the absence of a palpable depression or an abrupt non-vanishing ridge under gentle pressure, it must be borne in mind that a fracture may be present,

although considerably far removed from the external lesion; a fact we would remember when palpating the head carefully to discover places of tenderness and pain, which are generally found along fracture lines in a conscious patient. Pulse may be below or above normal in frequency. Temperature may rise early, and when it reaches a very high degree a fatal issue is pending. Respiration may be variable; when it becomes stertorous together with a slow pulse, it points to pressure at the base, posterior.

Treatment: In the cases which admit of some question as to diagnosis and especially those where external marks of violence are present, there is still some doubt in the minds of not a few among the rank and file whether or not the patient should have the benefit of that doubt by making an exploratory incision. As a defence of such practice the argument is that this procedure would entail little or no additional risk to the life of the patient, and that it is sometimes the *sine qua non* that leads to a correct diagnosis and the saving of life for its reward. Surgeons to-day rather wait for some definite sign or symptom, indicating intracranial mischief, to develop, inasmuch as skull fracture *per se* is not considered a surgical indication.

The skull cap and ice pack have been much in evidence in the past and the surgeon among the rank and file found comfort in the belief that by these measures the best was being done for his patient and that the development of symptoms for better or worse must be carefully observed. This conservative treatment applies to-day to some cases and especially to fractures of the base.

When the diagnosis of fracture with compression either from hemorrhage or from depressed bone, is made, surgical intervention should begin at once. The earlier the operation, the less damage to the cranial contents from pressure and inflammatory process. Not only is the chance for recovery better after an early operation, but more lives will doubtless be saved, and the traumatic effects such as epilepsy, cephalalgia and other nervous phenomena will follow less frequently. In reading some of the literature on this subject it appears to me that the early operation is many times more successful than a deferred operation, calculated to correct a bony depression, or to remove the products resulting from the failure of Nature to absorb a clot or to renew mutilated or destroyed intracranial tissue.

It is the common experience among surgeons that sometimes the most hopeless cases will recover under heroic treatment, and therefore it is morally never too late to operate, although clinically it may seem useless, and we fail in the attempt to save life. The operation should not stop short of efficiency when the patient's life threatens to cease. Naturally the surgeon dislikes to have the patient die under the knife and the temptation may be strong to terminate operative procedure and hurry him off to bed to die.

The following case, which was the incentive to the writing of this paper, will illustrate these points:

S. W., male, aged 16 years, while skating tandem on the river at night, collided with an approaching party, and was thrown violently on his head. I saw the patient within twenty minutes after the accident. He was semiconscious, profuse perspiration, pulse 78, temperature 100 in axilla, respiration normal, pupils unequally dilated, hemorrhage from left nostril, which during a later examination was found to issue from beneath the middle turbinate through the infundibulum. There was no paralysis of the limbs which the patient moved freely, nor did this sign develop later. The soft parts were not injured. We found an area of depression, extending from a point 1½ inches above the left eyebrow and 1½ inches in width, to beyond the lambdoid suture, where it was approximately 3 inches wide, involving a part of the frontal, nearly all of the parietal and part of the occipital bones. Patient soon became noisy and violent, so that restraint was necessary. He was removed to St. Joseph's Hospital and prepared for the operation. Immediately before the operation the temperature had risen to 104.5 in axilla, pulse 130, unconscious, but no paralysis. Only a few whiffs of chloroform were required. A large horse-shoe incision, keeping within the hair line anteriorly for cosmetic effect, was made. The flap was turned down sufficiently to expose the lower temporal ridge. Two pieces of bone, each 2½ by 5 centimeters were cut out with chisel, one at a point over the lower temporal ridge close to the coronal suture, and the other was cut out a little superior and posterior to the former defect and near the margin of the depression, and were not replaced. These points were chosen because they seemed most advantageous for the reduction of the depression. A large quantity of clotted blood, a very considerable amount of brain substance, its coverings and cerebrospinal fluid issued from these openings as the depressed pieces were being elevated by means of a blunt instrument and the fingers. Hemorrhage was troublesome. A large stream of venous blood issued from the direction of the longitudinal sinus nearly opposite the posterior opening. Plain sterile strip gauze packing against the falx cerebri hugging close to the bone controlled the hemorrhage effectively. The end of the gauze packing was drawn through the posterior bone defect. The anterior meningeal artery was ligated; diploic hemorrhage controlled by rubbing the edges with a blunt instrument. Hot normal saline was allowed to run in to clean out all loose tissue and clots and stop capillary bleeding. Placing the gauze packing against the falx cerebri was a matter of expediency in this case to control the hemorrhage. The loss of brain substance and the much-depressed condition of the brain created a considerable cavity and could be readily seen through the openings made. Just posterior to the Rolandic area was a cone-shaped hole, its base approximately the size of a silver quarter, tapering rather abruptly in the direction of the lateral ventricle. Over the motor area its upper and middle third presented here and there a small projection of cortical substance, otherwise the brain substance was very considerably mutilated and much of it lost, as well as a large part of the brain covering.

Plain gauze drains were placed through the anterior and posterior bone defects, skin flap was replaced, sutured with silk-worm gut, copious dressings and a plaster cast applied.

While making the bone defects the patient was apparently dying, there being no radial pulse, and respiration was almost imperceptible; also considerable cyanosis. It seemed useless to continue the operation. Soon after the first gush of pent-up blood, the condition of the patient began to improve a trifle. During operation saline hyodermoclysis was instituted and repeated two hours later.

Remarks: Patient is right-handed. The injury was over the left hemisphere. The absence of paralysis is remarkable inasmuch as the depressed bones covered nearly the entire motor area. The absence of permanent traumatic effects is remarkable in view of the fact that such a large area of supposed highly functionating brain matter and its coverings was lost. Discharge of cerebrospinal fluid at first profuse, gradually diminished in quantity, and ceased flowing on the twentieth day after

the operation. Immediately after the operation the temperature in axilla was 103. Four hours after operation, temperature in axilla 99.4, pulse 128. Ten hours after operation, temperature in axilla 98, pulse 88. On the second day, temperature by mouth 100, pulse 78. On the third day, temperature, pulse and respiration were normal. During the first twenty-four hours after the operation the patient was very violent and noisy. Consciousness was regained on the second day after the operation. The anterior drain was removed on the fifth day. Posterior drain was removed

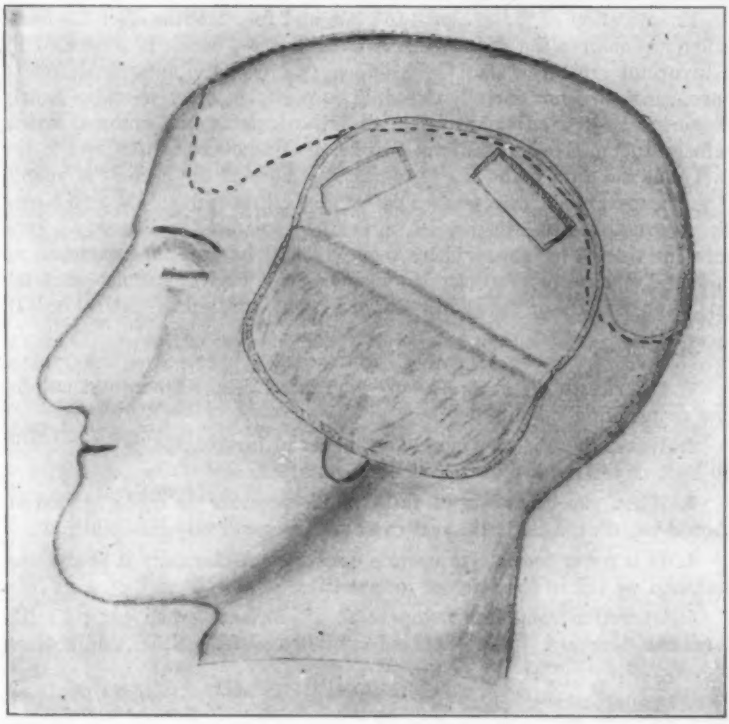


Fig. 1.—S. W. Dotted line indicates area of depression. Large horse-shoe flap turned down exposing the sites for trephining. Two bone defects near the margin of depression as indicated were made with hammer and chisel.

on the eighth day. Plaster cast, through which openings were made over the wound and through which the dressings were changed several times during the first thirty-six hours, was removed on the tenth day. On the second day after the operation the patient complained of pain in and about the left eye. There was slight discoloration over the left frontal sinus. The patient made an uneventful recovery.

Making the bone defects near the depression has some advantages worth considering. In the case reported, there was no difficulty in reducing the fracture through the openings made. It was possible by fre-

quently shifting the point of internal pressure, not raising too much at one time, to bring the several pieces uniformly into position without undue disturbance to alignment. By inserting the index finger through the bone defects, the under surface as well as the cranial contents could be palpated to a very considerable extent, to eliminate all error in reduction and to detect and remove foreign matter. It seems reasonable that the less disturbance to the bone fragments during reduction, the less likely will there follow bone necrosis. Again drainage can be established to better advantage and hernia is less likely to occur.

Examination of the patient two years and four months after the operation, we observe the following: No visible scar, which is concealed by a luxuriant growth of hair. No deformity except the anterior defect in bone, which had not entirely closed. The posterior defect remains nearly the original size. It is probable that the bone in the anterior defect reformed from the dura mater. Pringle of Glasgow calls attention to the fact that the dura mater may produce new bone if the patient is young. Goetz has recorded a case where a defect in skull measuring 8.5 by 5.5 centimeters was completely covered in, being regenerated in this way. It is rare for this to happen. There is no cerebral hernia; no headache; no epileptic seizures or other nervous phenomena. Patient has not since the operation, by lack of power in brain or brawn, betrayed this awful ordeal.

CONCLUSIONS

1. Injuries to the head are never too insignificant for a most careful and painstaking examination.

2. Where there is suspicion of intracranial trouble, the patient should be kept under the eye of a competent observer.

3. When the diagnosis of intracranial pressure is made, operation should begin at once, if the seat of trouble is surgically accessible.

4. It is never too late to operate even though clinically it seems useless, and we fail in the attempt to save life.

5. Operation should not stop short of efficiency when patient's life threatens to cease. (Author here exhibited patient, S. W., and a drawing, Fig. 1.)

17 Douglas Avenue.

DISCUSSION

Dr. Coleman G. Buford, Chicago:—I have not heard at this meeting a paper which will prove of more value than this particular contribution. Having worked largely among individuals suffering from brain diseases, and having intended to do only neurologic surgery in the beginning of my practice, and having had a very large experience as an assistant to Dr. Fenger in connection with brain surgery, I feel that I can appreciate this paper more than the average practitioner. I want to say, I am absolutely certain that the diseases and injuries of the skull are such that their treatment by surgical measures is in its infancy. We are often discouraged because our cases of tumor of the brain and our cases of epilepsy which have been turned over to the surgeon are not cured by the surgeon. We must remember that some brain tumors have been and can be successfully removed. We must remember, too, that in those cases where the tumors are not successfully removed, a decompression operation will relieve these patients of an

immense amount of suffering. Let us grant that the surgery of tumors and of epilepsy has not given the brilliant results we hoped for, but we must admit that the surgery for traumatisms of the skull and the surgery of the blood-vessels, such as aneurysms and apoplexy and Little's disease, is giving us really brilliant results. In the traumatisms of the skull, I am certain that surgeons are not opening the skull often enough and early enough.

Dr. Cassius C. Rogers, Chicago:—This paper is interesting to me. I have seen the case and the result of the beautiful work of Dr. Schurmeier, although the result obtained in this case is not different from the results that could be obtained throughout this country if this operation is done in time and performed under strict antiseptic precautions and carried to the limit, as was done in this case. I have operated on dozens and dozens of injuries of the skull with a high death-rate, but with results just as good as we get in other operations when delay has been the rule. The doctor who spoke last (Dr. Buford) stated that the results we get from operating on these cases are discouraging. They are discouraging because we get these cases after the internal medical man has had them and expects them to die sometime for days, and being disappointed, he advises operation, which frequently relieves his suspense. Brain tumors, brain abscesses, etc., which have existed as long as twelve years, have not been correctly diagnosed, and these cases have been treated for gumma of the brain and almost everything else except brain abscess. I would like to quote MacEwen in these cases as saying "that nearly all of them are diagnosed as gumma of the brain, and if they do not improve under three weeks' syphilitic treatment, then the pathologic condition should be regarded as some other than gumma. That gumma of the brain will yield in three weeks' antisyphilitic treatment if it is going to yield at all." Otherwise the case should be operated on. Every case of depressed compound fracture of the skull, as well as every case of depressed fracture, should be operated on at once. Every patient that is unconscious, who regains consciousness, and lapses into unconsciousness again, should be operated on. At any rate, the case should be regarded as surgical first, last and all the time, and the practioner who tries to treat these patients by the administration of medicine internally is taking a risk greater than is justifiable.

In fractures of the base of the skull the head should be immobilized by applying a cast including the head and shoulders.

[The discussion was here terminated by the chair calling time to adjourn for the noon hour.]

SYMPTOMS AND TREATMENT OF EXOPHTHALMIC GOITER*

CASSIUS C. ROGERS, A.M., M.D.

Professor and Head of the Department of Surgery, Chicago College of Medicine and Surgery.

CHICAGO

Mr. President, members of the Illinois Medical Society: I have chosen for my subject a condition that is more prevalent in females than in males, and one of which there has been of late years a great deal of discussion in regard to the treatment. It is claimed by some that exophthalmic goiter should always be considered a medical disease and be treated by internal medication, others claiming that exophthalmic goiter is a surgical disease and should be treated by partial or complete extirpation of

* Read at the sixtieth annual meeting of the Illinois State Medical Society, at Danville, May 19, 1910.

the gland. Experience has convinced me that neither theory is correct. It is unquestionably true that all cases of exophthalmic goiter are at times purely medical. It is equally true at other times that cases of exophthalmic goiter should be considered as surgical and operated upon.

In this paper I do not wish to discuss the technic of the operation, which is simple and well known to all surgeons, the time requiring about twenty minutes in the average case. I wish to present my views as to when cases of exophthalmic goiter should be considered medical and when surgical and the results I have obtained.

During the acute attack of exophthalmos or iodism, only in extreme cases should operative interference be considered. The mortality following enucleation of the gland during the acute symptoms is high and the patient is in no condition to take care of the additional toxins that are liberated at the time of the operation, due, perhaps, to the traumatism and hyperemia that is produced in and around the field of operation. At the beginning of the attack and during the attack we should never operate, nor should we operate too soon after the recovery. If, however, death seems imminent, and we are satisfied the patient cannot be improved under medical care, we are sometimes justified in ligating the superior thyroidal arteries under local anesthesia, thus cutting off the principal blood supply and decreasing the formation of toxins.

There is another stage in exophthalmic goiter, when operating is not indicated, and that is the stage a great many of these cases have reached before they are brought to the surgeon for interference. After a case has been treated for repeated attacks of acute thyroidism, and has all the symptoms and signs of far advanced, pathologic changes of the heart and blood-vessels and the patient is in a morbid condition, surgical interference should be refused. Exophthalmic goiter is surgical from choice. We are told by men with great experience that a patient may have exophthalmos, recover, and never suffer the second attack, but in my experience that is not the rule.

After patients suffer one attack of acute thyroidism, they usually have repeated attacks at stated intervals. These intervals may be a few months apart, or they may be many months apart, but each attack is, as a rule, more severe than the preceding one. This being true, it is my opinion that exophthalmic goiter should be considered a surgical disease, if the patient has suffered two attacks of acute thyroidism, and the operation should be performed as soon after the second attack as the patient is found to be recovered from the effects of the toxemia. That is, six or seven weeks after all symptoms have disappeared.

Treatment.—The mode of treating acute cases has caused much discussion, and a great deal of experimental work has been done along this line in recent years. The serum treatment, the administration of antithyroidin, ridogen and thyroidectin, as well as the use of the *x*-ray and high-frequency currents, have had their strong advocates. I have used all and have derived about equal benefit from all, but all that I have been

able to obtain is temporary relief. I have never seen a case of exophthalmic goiter cured by internal medication.

The greatest relief has been obtained from absolute rest in bed in a quiet room, dimly lighted, an ice-bag over the cardiac region to control the heart, nourishing but easily digestible food, and no internal medicine.

Surgical treatment consists of removing about three-fourths of the gland; in severe cases, ligating the thyroidal arteries, and later removing the gland, if necessary.

The question may be asked, how can we make a diagnosis of exophthalmic goiter, and upon what must we rely to be satisfied that the patient is not suffering from some disease other than thyroidism. The blood-

Exophthalmic goiter in male, showing facial expression.

count is practically normal in a patient that appears to be suffering from severe toxemia. We have in exophthalmic goiter nine points of diagnosis: 1. Tumor; 2. tachycardia; 3. tremor; 4. exophthalmos; 5. gastro-intestinal disturbance; 6. mental disturbance; 7. amenorrhea; 8. dysmenorrhea; 9. rapid changes in body weight.

In an attack of acute thyroidism, all these symptoms and findings may be present, but it is not the rule. There may be only two or more; there may be tachycardia and mental disturbance and nothing else of importance can be found to assist us in our diagnosis. Again, there may be tremor, tachycardia and gastro-intestinal symptoms, etc. Goiter or tumor is not always perceptible, and the patient may suffer from violent toxins from a very small gland. The size of the tumor has absolutely nothing to do with the severity of the symptoms.

There is undoubtedly an association between the thyroid, thymus, pituitary, adrenals and the genitalia, especially the ovaries and perhaps the uterus. We frequently find these patients suffering with dysmenorrhea, menorrhagia, or amenorrhea, with slight gastro-intestinal disturbance, nausea and perhaps vomiting; upon bimanual examination we find the uterus slightly enlarged, and the ovaries tender and enlarged. If the thyroid gland is examined and found slightly enlarged, it may be the seat of the disturbance in the pelvis. I will cite a case that developed after the partial removal of the ovaries, a most violent attack of thyroidism. The ovaries may have been the organ that was trying to produce an antidote to the toxins produced in the thyroid gland, and the ability of the patient to produce the antidote being taken away, the patient developed a recurrent attack of exophthalmos. To substantiate my statements I will cite several cases, outlining the treatment and the results obtained.

CASE 1.—Miss B., aged 30 years, American; weight, 130; height 5 ft. 8 in., entered the Willard Hospital June 16, 1908. Operated on June 19. Left hospital July 15 cured.

Family History.—Father dead; committed suicide. Mother living and well. Brothers, one living and well. Sisters, two living and well.

Patient's History.—Patient was never strong. Menstruated at age of 17, at which time a goiter appeared for which she was treated four months; treatment unknown. At the age of 19 patient had chlorosis; was treated six months. From the age of 19 to 26 she was treated for nervousness and uterine trouble; treatment unknown. At the age of 27 had an attack of nervous grip in March; confined to the house three months. At the age of 28 was operated on for ovarian cysts; no improvement, but had a severe attack of nervous grip (nervous grip was the name given her by her physician) lasting all winter. At the age of 29, Nov. 30, 1907, changed doctors. She was at this time complaining of a sore throat; temperature 98.6, pulse 90-130. Examination of throat showed tonsils congested; small goiter present. December 4 Dr. C. was called. He found her in bed, face flushed, complaining of a severe headache. Temperature 98.6, pulse rapid, 120-140, weak. Thyroid larger than on November 30. She complained of severe pain in the abdomen, tongue was coated, breath offensive. She told the doctor she had one of her old attacks of nervous grip. The doctor made a diagnosis of exophthalmic goiter; treatment, eliminations with thyroidectin. Was in bed from Nov. 30, 1907, to March 7, 1908, when she was operated on for chronic appendicitis and prolapsed uterus. No improvement. Left the hospital and sent to a sanitarium, where she was confined to her bed until she entered the Willard Hospital June 16, 1908.

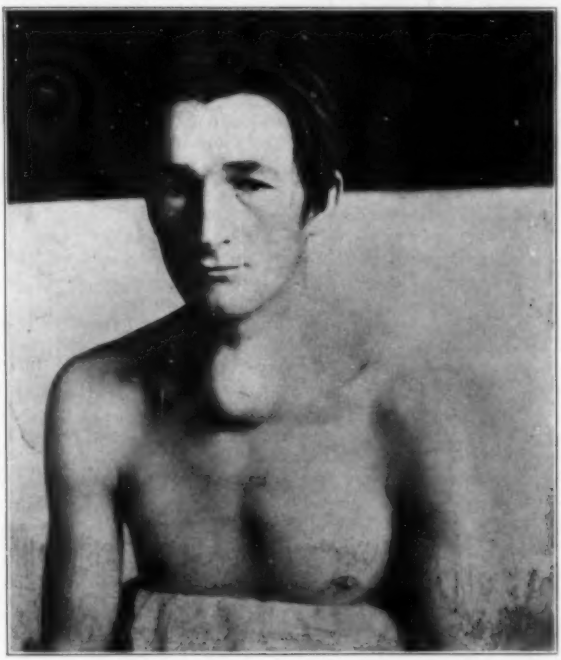
Examination at the hospital: 1. A small goiter present. 2. Exophthalmos. 3. Pain over entire abdomen. 4. Extremely nervous. 5. Mitral regurgitation. 6. Tremor. 7. External and internal hemorrhoids. 8. Patient had been in bed for six months. 9. Blood: Hemoglobin, 90; reds, 5,400,000; leukocytes, 7,812; polynuclears, 62 per cent.; large mononuclears, 10 per cent.; eosinophils, 1 per cent.; small mononuclears, 27 per cent. Patient showed symptoms of grave toxemia without blood change, the typical condition found in exophthalmic goiter. 10. Marked mental disturbance.

As her condition was chronic thyroidism, I advised operation at once. June 19, three days after entering hospital, I removed entire right lobe and most of left lobe. Right lobe contained a large cyst. Also operated for hemorrhoids. Patient stood alone on the seventh day after the operation and was walking on

the tenth day. She remained at the hospital four weeks at our request to note condition at menstrual period. This was free from pain, the first time in thirteen years.

Patient at present is fairly well, but has at times a little mental disturbance. This patient has had two laparotomies, but received no relief until goiter was removed.

CASE 2.—Miss C., aged 19 years, Irish, was admitted to the Willard Hospital Dec. 3, 1908. Family history negative. Father died, aged 63, of apoplexy. Mother living and well, aged 58. Brothers, two living and well. Sisters, two living and well.



Cystic goiter in male, showing no change in expression.

Patient has had diseases of childhood, otherwise she has been well until the present illness started six months ago. At this time she complained of nervousness, with some dizziness, accompanied by a tingling sensation in the fingers. One month later, or five months before entering the hospital, she had a slight gastric hemorrhage, vomiting a small amount of blood. She received treatment for gastric ulcer and improved. Did not menstruate for three months. Shortly after this she complained of headache and impairment of vision, but did not seek medical aid. At this time exophthalmos developed.

Dec. 2, 1908, or the day before entering the hospital, she suddenly became delirious and had almost complete paralysis of the right arm and leg at this time. Dr. V. L. Sheets saw her and advised the mother to take her to the hospital. This she refused to do. Early next morning, December 3, the patient vomited a large amount of dark blood. She was at once removed to the hospital, where I first saw her. The patient was restless, talking incoherently, left leg and arm

in almost constant motion. Right leg and arm moved but little. Temperature, 99.6; respirations, 26; pulse, 150, irregular, marked mitral regurgitation. Exophthalmos and a very small goiter.

Diagnosis: Exophthalmos with gastric and probably cerebral hemorrhage. Blood: Hemoglobin, 85; reds, 5,600,000; leukocytes, 8,500; polynuclears 76 per cent.; small mononuclears, —; large mononuclears, —; uranalysis negative. Patient was placed in a quiet room.

Treatment: Absolute rest, ice bag over heart, bromids and thyroidectin. The patient improved rapidly and left the hospital Jan. 9, 1909, on the thirty-seventh day apparently well. She was under the care of Dr. Sheets until March 31. She re-entered the hospital for operation. At the request of Dr. Sheets she was assigned to me, and the following day, April 1, I removed, under ether anesthesia, the greater part of both lobes. The patient was up in a chair the third day after the operation, and left the hospital the morning of the seventh day, apparently well, and has remained in perfect health to the present time.

Summary: 1. Tachycardia. 2. Goiter. 3. Exophthalmos. 4. Tremor. 5. Mental disturbance. 6. Gastro-intestinal symptoms. 7. Paralysis of right arm and leg. 8. Dyspnea. 9. Amenorrhea. 10. No blood change.

CASE 3.—Mrs. B., aged 25 years, entered the hospital March 7, 1907, giving the following history: For a number of years she had complained of dyspnea, marked nervousness, palpitation of the heart, marked impairment of vision. On entering the hospital she was scarcely able to walk around the room, the slightest exertion causing palpitation of the heart and extreme weakness. Examination revealed the following: Patient poorly nourished, skin of dusky hue, tongue coated, eyes bulging. Lost 60 pounds in weight in two years. Physical examination showed marked emaciation; a tumor in the region of the thyroid gland; the heart was enlarged; a mitral regurgitation murmur was present; heart beating from 140 to 160 times per minute. Temperature ranged from 98.6 to 100. There was marked tremor when the arms were extended and the fingers separated. Diagnosis: exophthalmic goiter. Advised operation.

The patient had been treated for several years with thyroid extract, later by thyroidectin, with little or no benefit. After remaining in the hospital one month under treatment, complete rest in bed and forced feeding, the gland was removed April 5, 1907, under ether anesthesia. The tumor was small, but was held firmly against the trachea and partly surrounded the trachea. The trachea was much narrowed by the constant pressure of the tumor, producing the dumb-bell-shaped trachea. The constriction of the trachea in connection with the pressure on the recurrent laryngeal nerve caused the difficult breathing.

An incision was made from right to left external jugular veins parallel to the folds of the neck; the skin was reflected up and down, respectively, and the muscles divided longitudinally in the median line over the trachea and retracted. The tumor was exposed and removed with considerable difficulty, being bound firmly around the trachea. The wound was closed by interrupted silk-worm-gut sutures.

CASE 4.—Miss F., aged 24 years, American, entered the hospital, Jan. 1, 1908. Family history: Father living and well, aged 56 years. Mather died, aged 61, of carcinoma. Sisters none; brothers none.

Has always been well excepting the usual diseases of childhood until the present illness. Menses regular. About two years before entering the hospital a goiter gradually appeared. She was treated and the tumor diminished in size, but the eyes became prominent and she at times had great dyspnea with tachycardia. There had been at no time any gastro-intestinal symptoms.

The greater portion of the right and left lobes were removed Jan. 2, 1908. Patient up in a chair on the third day and left hospital on the tenth day. There have been no symptoms since.

Summary: 1. Tachycardia. 2. Exophthalmos. 3. Goiter. 4. Tremor. 5. Dyspnea. 6. No gastro-intestinal symptoms. 7. No mental disturbance. 8. No paralysis. 9. No menstrual disturbance. 10. No blood changes.

DISCUSSION

Dr. W. E. Walsh, Morris:—This boy, when 11 years of age, but who is now 18, came to me complaining of headache, weakness and enlarged throat. The first thing was they wanted the boy to grow, and he was fed thyroids in 1-grain doses three times a day. He had a fast heart, and in the summer of 1907 he developed acute thyroidism. His pulse went up to 120 to 130; blood-pressure 110 to 130 or 140; he developed a murmur, and this lasted for three weeks, and recovered. In the meantime we have used the *x*-ray on the gland, and he was referred to several specialists and treated without any benefit as regards this growth. The father and mother and other members of the family are practically normal. There may be some little abnormality in one of the other children, but nothing along this line. Now, this young boy, first of all, has the round face of a cretin. He is of short growth. He has a very small undeveloped testicle. He has a mucous patch on the back and pubes and supraclavicular space. His hair is rather coarse; his skin dry and scaly. Besides, he has the tremor of exophthalmos; he has a very acute mentality. He has always stood at the head of the class. He went through the first year of high school and gave it up two years ago because efforts to study made his heart beat too fast. The heart beat is about 80 or 90. If he exerts himself, the heart beat runs up. His fingers are not those of a case of myxedema or a cretin. The extraordinary thing is that we may get a hyperthyroidism gradually develop into a myxedema, and *vice versa*, in grown people, but in looking over the literature we find that this is the first case of cretinism, or apparent cretinism, that has carried the hyperthyroidism all through. In this respect it is an extraordinary and interesting case. He probably has a perverted function of the thyroid, or it may be associated with some trouble of the pituitary body. This we have not worked out, but we are going to get competent people to try and do so.

Among the other things that have been suggested for treatment have been feeding with orchitic fluid and ligation of the upper pole of the right side. During the attack he had in 1907 there was a nodule in his right thyroid, which was hard and tender. He had a slight temperature, but this went down afterward. They wanted to have the nodule taken out, but the surgeon would not consent to do it. The best results as regards the diminution in the size of the thyroid, and especially his cheeks, have come from taking thyroids or iodonuclein.

Dr. Carl B. Davis, Chicago:—We know that there is a definite relation between the thyroid and the ovaries, from the swelling of the thyroid in adolescence, pregnancy and the menopause, and not infrequently a woman, who is normal otherwise, will show enlargement of the thyroid at each menstruation, and in some cases menstrual trouble is relieved by the use of thyroid extract. A similar discussion to this was held in the Chicago Medical Society last November. Dr. Rogers mentioned the relation between exophthalmic goiter, hyperthyroidism and menstrual disturbances; at least ovarian or pelvic pain. At the same meeting last fall I reported a case in which a panhysterectomy was done for an enormous fibroid. The ovaries were removed at the same time, and although they were perfectly normal, they had to come out because of the blood supply. This woman had a small nodule in the right lobe of the thyroid which had been present for fifteen years, but which gave no trouble. She returned to the hospital in three months after the operation with a typical case of hyperthyroidism. She had lost weight, showed tachycardia tremor and exophthalmos, and this nodule had increased to the sizt of a fist. We removed the right lobe. The whole clinical picture changed, and she gained 40 pounds in three months.

Thinking there was some relation between the hysterectomy and her condition, dogs, which had normal thyroid glands, were subjected to double ovariotomy, but showed no change in their thyroids. But every dog with a primary enlargement of the thyroid whose ovaries were removed, showed an increased enlargement of the thyroid, and in some of them the enlargement of the thyroid attained enormous size. Some of the dogs, after the removal of the ovaries, were fed thyroid extract, and no change was noticed in the thyroid glands. After

dropping the extract, inside of six weeks every dog showed enlargement of the glands. It would seem that not only is there a relation between the ovaries and thyroid, but also between the thyroid and the pancreas, the hypophysis and the chromatin system, consisting of the chromophilic cells of the adrenalin bodies and the sympathetic system. It has been shown that if we inject adrenalin extract into dogs we get a glycosuria. Thyroidectomized dogs do not show this reaction. The glycosuria returns in thyroidectomized dogs in direct proportion to the amount of thyroid extract we feed the dogs, showing a definite relation between the thyroid gland and the internal secretion of the pancreas. It has been shown that the chromophilic system plays a considerable part in the mobilization of the carbohydrates. The thyroid has an activating action on the chromophilic system. It has an inhibiting action on the internal secretion of the pancreas. In exophthalmic goiter we get an overproduction of the thyroid extract and an activating action on the chromophilic system and an inhibiting action on the pancreas.

With increased mobilization of sugar and diminished oxidization we obtain a high sugar index in the blood and a subsequent glycosuria. This condition is found in a certain number of cases of hyperthyroidism. Some cases where glycosuria is not present will show it on excess of sugar in diet. Glycosuria is not constant and cannot be induced in some cases of exophthalmic goiter. Rogers of New York suggests that it is due to a variation in some of the constituents of the thyroid extract, or to some other disturbance in the inter-relation of the ductless glands.

Kocher has recently advised early operation for hyperthyroidism. Goiter associated with tachycardia would be sufficient without waiting for a further development of symptoms and a less favorable condition of the patient.

Dr. Frank P. Norbury, Hospital:—The diagnosis of cretinism in the case presented by Dr. Walsh is, in my judgment, faulty; at least, in so far as my knowledge of cretinism goes. I judge by the experience I have had with cretins, and a fair knowledge of their characteristics as revealed by the literature. This boy does not present the physical or mental characteristics of a cretin. I especially note his stature; his facial expression; his hands and feet; his skin; his hair; the pulse-rate, and above all, his mentality.

A cretin is marked by short-stunted body growth, with characteristic bow-legs, large feet, hands and joints; a protuberant abdomen due to deposits of solid edema, a peculiar heavy growth of coarse hair, which extends down onto the forehead; a scurvy skin; drooling at the mouth and a marked intellectual defect, which is a part of cretinism. In fact, a true cretin is an idiot by deprivation, which the improvement which follows giving of the thyroid extract proves. Cretinism is certainly due to the absence of the internal secretion of the thyroid gland. The feeding of the patient with thyroid as a therapeutic agent, overcomes the constitutional defect—the defect in metabolism, and improvement follows.

Those of you who have followed the literature will remember the cases reported by West, of Ohio, who made a most systematic clinical study of this disease. I saw and treated as a consultant the case of a boy cretin, treated by thyroid extract, who developed physically and mentally to the degree of being able to enter school and hold his own with the average boy of his age. The patient presented here to-day is, in my judgment, a case of infantilism with thyroid involvement.

In speaking of the treatment of exophthalmic goiter, I would like to mention an observation recently made by Dr. Miles F. Porter, of Fort Wayne, Ind. It was my privilege to see the patient with Dr. Porter the day of treatment at Fort Wayne. Dr. Porter's treatment was simple, unique and striking. The patient presented the usual symptoms of exophthalmic goiter with a pulse-rate of 136 to 140. Dr. Porter injected boiling hot water in both lobes, with the result that there was a diminution of the size of the goiter and the pulse dropped to 86 or 90, without much physical discomfort on the part of the patient. The theory of treatment is, that the hot water coagulates the colloid and reduces hyperthyroidization, thereby giving relief. Dr. Porter says the treatment is experimental.

This was the first case he has treated by this method. I would like to ask if anyone here has had any experience with this treatment.

Dr. James F. Hultgen, Chicago:—In regard to the blood findings in Graves' disease, I remember quite well that last summer Kocher wrote an article on that very question, maintaining that in exophthalmic goiter there is lymphocytosis and leukopenia, which he considered characteristic. There is certainly not a polynucleosis nor leukocytosis in that disease except in the acute exacerbations, as the disease is nothing but a chronic intoxication from the thyroid, and it is to be expected that it should only bear witness to a chronic irritation of the blood system which expresses itself in a leukopenia and mononucleosis. Only when we get an acute exacerbation the polynuclears run up without a corresponding leukocytosis.

I am glad to have heard Dr. Davis' remarks, after having seen Dr. Axel Werelius conducting his experiments on goitrous dogs in Chicago. He finds that there is no relation between the goiter in dogs and exophthalmic goiter or Graves' disease; although they are cystic goiters, still he could not connect them with the disease such as we find in the human being.

If Dr. Davis objects to the term Basedow's disease, Graves' disease or exophthalmic goiter, I think one can raise as much objection or more to the term of hyperthyroidism. I think there is a good deal in a name. There is more than hyperthyroidism. There is always more or less disthyroidism and we should understand it is a disthyroidism and not a hyperthyroidism. There is a thick skin infiltration of the subcutaneous tissues with myxedematous symptoms; indeed, in the majority of cases we get a mixture of myxedema and hyperthyroidism.

With regard to the case of this boy, I agree entirely with Dr. Norbury. I believe it is a case of infantilism *plus* a little myxedema and a little hyperthyroidism. I do not think I could place him under any single head and label him such and exclude the others.

Dr. Victor C. Schrager, Chicago:—From the number of cases of exophthalmic goiter I have watched in the clinics of Dr. Murphy and Dr. Bevan, I have gained the impression that a number of these patients do not get well under any treatment, medical or surgical, because there is a close correlation between a number of organs of internal secretion. This has been emphasized particularly by one writer, who has published a monograph in which he lays great stress on the correlation between the organs of internal secretion. It is not the thyroid alone that is changed pathologically, but the hypophysis, the adrenals, and a number of other organs. We cannot cure the individual after she has reached that pathologic state. If you say that surgery is going to cure all these cases, then I think it is a lack of knowledge on your part of those changes that take place in the organs of internal secretion.

I have learned a small detail from Dr. Murphy in the technic. He puts a gutta-percha drain in the lower pole of the incision, not so much for draining the serum that collects in such a vascular zone, as to drain the excess of thyroid secretion which happens to take place in a raw surface. You cannot cover that surface; after removal of the two poles you have a secretion which gives the patient alarming symptoms after twenty-four hours. I recall the case of a clerygyman who had a temperature of 105. He had very marked tremor; was delirious after operation, which consisted in the removal of one and a half of the lobes. The case was not drained. Ever since Dr. Murphy drains all cases, not with the intention of removing blood and serum under the skin, but removing the excess of thyroid secretion which takes place after operation.

There are a number of cases which come within the domain of the neurologist, and those are the cases that present the exophthalmic goiter syndrome without exophthalmos. There is tremor, tachycardia and nervousness which are characteristic of exophthalmic goiter, but these cases are not associated with enlargement of the thyroid glands. In other words, it is unnecessary to have a very large thyroid which you can see across the room to call it exophthalmic goiter. With the exception of the cases where the thyroid is enlarged within the chest,

the so-called intrathoracic goiter, it is not visible, but which you can detect if you percuss the upper portion of the sternum, not the thymus, and which represents exophthalmic goiter within the chest.

With reference to the case exhibited by Dr. Walsh, I quite agree with Dr. Norbury that it is not a typical cretin. However, a cretin may improve spontaneously without any medication, and there are a number of such cases reported. This can be explained in two ways: either the thyroid has suspended function for years, or else the thyroid, which is completely pulseless, histologically, is compensated for by accessory thyroids. There are a number of cases reported in the literature of insignificant nodules which at some time became enlarged and compensated for the function of the deficient thyroid.

Dr. Coleman G. Buford, Chicago:—If I could further add a ray of hope to a certain group of cases of advanced hyperthyroidism who are refused operation, I would feel that I had done a great work. A year and a half ago, because I wanted to hear my patient speak during the removal of the thyroid gland—because I wanted to preserve the recurrent laryngeal nerve and to imitate what had been done abroad successfully, and because I believed I could more safely operate on certain cases of advanced thyroidism, I adopted local anesthesia in my thyroid work. In this year and a half I performed about fifteen thyroidectomies under local anesthesia, and of this number I lost none. One of the two cases which I operated on a week ago last Monday was the first who complained much and she asked for an anesthetic. All the rest are the best testimony I can offer that women will stand the operation performed under local anesthesia, and the best testimony I can offer as to the value of local anesthesia in thyroid surgery in the worst cases of thyroidism is that one of these patients would not have undergone any physical test which is required by some surgeons, such as walking around the block, or that the patient must not have acute dilatation of the heart. This patient had the latter and delirium, yet in despair we took this patient to the operating room, infiltrated the skin, removed the thyroid gland without any resistance on her part, and she did not have an exacerbation of her thyroidism afterward. Five months have elapsed, and the remaining lobe of the thyroid is growing, but she is getting better daily. The growth after operation of the remaining lobe is a thing that is distressing the minds of many surgeons. If they will only wait one year or a year and a half, they will find that this is only a compensatory enlargement, and while the patient gets restless because of the enlargement, and may have increased thyroidism, in many instances there will be a gradual diminution in the size of the remaining thyroid which took on temporary hypertrophy.

Dr. Charles L. Mix, Chicago:—I am glad Dr. Buford called attention to the hypertrophy of the left lobe after the removal of the right. In some of my own cases I have further noticed that such hypertrophy was sometimes accompanied by transitory symptoms of hyperthyroidism coming on again. The pulse in one man, operated on two years ago in July, rose from seventy to eighty beats after operation to about 100. If during this period of irritation we do not lose our heads, as Dr. Buford said, and send the case back to the surgeon to have the other lobe removed, the case will right itself. The pulse of this individual at the present varies from seventy-eight to eighty. I regard the enlargement of the left side as merely due to an overcompensation on the part of the gland after a large portion of it has been removed. Nature, in trying to restore thyroid equilibration, apparently produces a little more thyroid extract in the left lobe than is necessary. But if one waits, the condition, at least in the cases I have seen, rights itself.

Dr. Harold N. Moyer, Chicago:—I would like to say a word or two with reference to the possibility of spontaneous cure. The idea that only surgery and medicine can relieve or cure these cases, is a mistake. I can go over my case-books for twenty years and pick out many cases that have never been operated on or treated, and they got well; I want to emphasize the point that spontaneous cures in cases of exophthalmic goiter of a grave character are very common.

Dr. Cassius C. Rogers, Chicago (closing the discussion):—I did not take up the technic of the operation in this paper at all. When I operate on these cases I drain all of them by split rubber tubes. These rubber tubes are small.

Recently there were two articles published in the *Presse Médicale* of April 6 and April 9, 1910, in one of which the author deals with hypertrophy of the thymus gland in these cases, and the other discusses pregnancy in connection with enlargement of the thyroid, and takes the position that few of these women become pregnant; on account of the internal secretion of the thyroid gland they are rendered sterile.

As to the blood count in these cases I think Dr. Hultgen must have misunderstood me in saying that there was an increase in the polynuclears. I did not say that. There was no change practically in the leukocytes, so far as an increase is concerned. I have had about 100 cases of exophthalmic goiter and a blood count made in every one of them. None of them had marked leukocytosis, excluding the acute cases, when we have frequently an increase in the polynuclears. In chronic cases we have a diminution in the polynuclears at the expense of the small mononuclears. When there was a diminution in the polynuclears, the small mononuclears were increased, and the large mononuclears were not affected to any great extent, so there must be an increase in one at the expense of the other. The polynuclears are diminished, while the small mononuclears are increased, and that is what we have found in the majority of these cases. The mortality following operation in these 100 cases was 8 per cent. I am sure, in the cases I have seen that have not been operated on, but have been treated by internal medication, the mortality has been much more than 8 per cent.

With reference to local anesthesia, I have operated under local anesthesia and under ether and chloroform. Sometimes we have cases of exophthalmic goiter of the hemorrhagic type where we have increased blood supply; at other times the blood supply is not so great, and when we have extensive pulsation in these glands the operation under ether is very hemorrhagic, and chloroform is preferable. I have operated under local anesthesia with cocain and removed goiters of the exophthalmic type as large as my fist, and these patients did not know they had undergone operation for exophthalmic goiter for three days after the operation. They thought the superior thyroid vessels were ligated under local anesthesia.

SUPERSTITIONS OF THE MEDICAL PROFESSION IN REGARD TO CONTAGIOUS DISEASES

JAMES E. STUBBS, M.D.

CHICAGO

"'Tis a history handed from ages down; a nurse's tale which children open ey'd and mouth'd devour. We learn it and believe it."

"The superstition in which we were brought up never loses its power over us even after we understand it."

Since earliest times diseases were supposed to emanate from the evil one, spirits, hobgoblins, etc. Man is prone to superstition as the sparks are to fly skyward. What he cannot see, but realizes the effect of, he is inclined to attribute to some occult power, a something supernatural. In ancient times, and not so very ancient either, in some places on this earth, the oracles were consulted and the gods importuned to drive away the evil spirits that were afflicting the people.

Diseases have been supposed to have been transmitted through the air. Wonderful stories have been told as to how the black plague and

cholera came in the form of a great cloud or mist containing the contagium and settled down on large tracts of country carrying death, misery and suffering to nearly all the inhabitants of whole territories. Ignorance could not account for it; believed it to be a punishment of the people for the sins committed, hence the incantations and supplications to countless unknown gods.

The virus of disease was supposed to be carried in the clothing of human beings; in the hair of the dog; in the fur of the cat; in the feathers of our little pet, the canary bird; in rags, papers, books, letters, etc., and this idea is still harbored by the unthinking masses of the people and by many physicians.

This supposed bogy individual is believed to lurk in dark, filthy alleys, in sink holes, privy vaults, stagnant water, etc. He is supposed to ride on the wings of the winds leaving in his wake villainous odors laden with bacteria, bacilli, spirochetes and what not. But none of it! Bad odors do not of a necessity contain the germs of disease. What odor is disagreeable to one person may be pleasant to another, a mere matter of taste. Men may live and thrive in foul, disagreeable air. Witness our sewer cleaners; a stronger class of men cannot readily be found in Chicago than the men who are engaged in cleaning our public sewers. They go down into the sewers, live over them, breath their foul, stinking atmosphere, and yet they are a healthy, rugged class of human beings. So much for your pernicious foul air. Out with your theories and give us facts.

Diseases were supposed to have been carried on railroad trains from one city to another by taking germ laden atmosphere in the compartments of the cars. Atmosphere is not easily transported in open cars, but they do carry contagious diseased persons, thereby spreading the living germ from the living individual.

The theory has been advanced, and believed, that vessels carry diseases in their cargoes and in the bilge water. Now we say they carry the pesky mosquito anopheles, the rodent, and familiar though much detested bed fellow, the bed-bug and flea. You know that the Lord, according to ancient script "sent all manners of flies and lice upon the people" Egyptian, and the result was pestilence and death. In the light of modern scientific medicine, "Thou shalt not be afraid of the pestilence that walketh in darkness, nor the destruction that wasteth at noonday."

All kinds of theories have been advanced as to how the virus of disease is scattered over the face of the world. It has been, and still is the general belief of mankind, including boards of health and some physicians, that nearly all diseases are spread by the people carrying the disease germs in their clothing, in rags, in filth, in paper money; dogs and cats doing their share in carrying the death-dealing germs to their best friend, man, poor, much abused, innocent creatures; when you come to examine and scientifically investigate, how absurd it all is.

The idea that fomites, clothing, rags, paper, contain the contagium is a most popular theory and has been and is accepted by the great mass

of mankind and is a result of ignorance and superstition. Great famines and wars are supposed to have been the cause of outbreaks of scourges and pestilences that have at times swept over the country. Indirectly they may have been, but not *per se*.

Some of the pestilences—bubonic plague and cholera, have been of such violence as to absolutely depopulate large cities, towns and districts and were supposed to be the judgments of the gods on the people; but it was pure ignorance of the inhabitants who did not know the common laws of protection from contagion. Prayers, incantations, fires, ringing of bells, clanging of cymbals, shouting and all manner of noises have been employed to drive away the evil spirit, disease, but all in vain.

Like Paul on Mars Hill, when he saw among the many monuments dedicated to the known gods one erected to the unknown God he proceeded to declare Him to the waiting multitude; so Science, not seeing among the many confused signs, tokens and totem poles reared to the unknown cause of disease, proclaims to the world that there is a known, true cause for every disease that is afflicting humanity and announces that mosquito anopheles is the carrier of malarial fever; that the mosquito is the carrier of yellow fever; that the rodent rat is the conveyor of the virus of bubonic plague; that the pesky little fly of the lower Ganges river is the promulgator of cholera; the tsetse fly the distributor of the poison of sleeping sickness, and *Bacillus typhosus* the cause of typhoid fever; influenza spirochete the cause of la grippe; and it also assures us that it will give us the cause of scarlatina, rubeola, varicella and variola if we will with patience wait. Now comes pellagra, the latest of parasitic diseases. Some one who considers himself authority says "corn, i. e. maize, is the cause," and without any other proof we accept the dictum and, like a flock of sheep, when one goes over the fence the others follow, bleating, yes, corn is the cause of pellagra; down with corn. Please wait until you know the truth before condemning. Pellagra is in the country where no corn, i. e. maize, is raised, known or eaten. What irrational thinkers we doctors are. A physician having the degree of Omega makes a statement and all open mouthed swallow the assertion. Require proof; show me. The itching desire to be the first, not the surest, in the field of discovery leads many to make egregious bulls for the reading public. In regard to pellagra, the actual facts are that it is due to the *semulium reptens*, a blood-sucking insect found in running water which appears to be perfectly pure and free from any bacteria or disease-giving germ. It is most active in spring and fall. Now what becomes of the fomites theory in this disease? And what about the lazy, tired sickness? Any fomites about the hook-worm? We are not always scientific in our science. Science also points to a putrefactive condition of the intestines as the cause of cancer. Science asks us to be patient, prove all things before accepting theories. When we know not from whence cometh disease we become cowards at the mention of a great scourge in our neighborhood or state. How blanched the cheek of the mother when told that scarlatina or diphtheria or small-pox is in the vicinity, and when the outbreak occurs how it is charged up to milk,

food, etc., and no one takes the trouble to make a thorough scientific investigation as to the origin of the disease.

Somebody says that a certain individual came from a neighboring town or locality where the disease was prevalent and forsooth that person brought the germs with him, in or on his clothing. That is not proof, merely gossip. Again rumor has it that there is scarlatina or measles or diphtheria on, or in the neighborhood of a dairy farm, then up goes the cry "the germ is in the milk pail," and the lacteal fluid is given to the hog or chickens on which they grow fat and we eat the chicken and hog. But no one finds the germ in the milk, and still we are groping in the dark.

How many years since it was taught that malarial fever was caused by a certain specific miasma and back water that was standing on submerged land, or newly ploughed ground? What intelligent physician believes it now?

A few years ago in Crawford county, Pa., an outlet to a small lake was dammed up in order to raise the level to make it a feeder to a nearby canal, and by so doing a great many acres of land were flooded and it became a great breeding place for the anopheles mosquito. Results: in the fall of that and the next year an epidemic of malarial fever was on the community and the silent home of the majority reaped a large increase of tenants, and all charged to miasma, polluted atmosphere, etc. The low, sandy seacoast of New Jersey has been from time immemorial the habitat of the pesky anopheles mosquito, who prowls by night, singing his sweet lullabies, all the time seeking whom he might find to inoculate with the plasmodium malariæ; then follows in due course of time the chill, fever and sweat. No mal air to charge this to. Some parts of Italy have been rendered uninhabitable for bipeds and quadrupeds in the home of the anopheles mosquito. They were the original denizens and they defended their homes. Now we know that malarial fever is the direct result of the bite of said mosquito, and in no other way can man be infected with this disease. The downfall of Rome and the ruin of Greece has been attributed to the ravages of malaria depleting its armies and population.

How many years since yellow fever was supposed to be conveyed from place to place in fomites, in the mails, in the clothing, in rags, in vessels? How many years have lapsed since our government had all mail matter nearly incinerated, that was received at New York coming from an infected territory in order to kill the germs of yellow fever? And who has forgotten the shot-gun quarantine established in some parts of the south? But the anopheles, like Mephistopheles, laughed in his sleeve at the discomfiture of his victims, and the ignorance of man. But we have become wise now and anopheles and all his kin are being hunted to death on his native heath.

Only a short time ago bubonic plague was charged up against the heathen Chinese, the East Indian, and the little Jap for its appearance on our western coast by the influx of these undesirables, bringing the germs of this terrible disease. But when scientific men got to work in

a scientific manner and persisted in searching for the cause they finally cried "eureka" and the foreigner was exonerated and the rat was found to be the importer of the foreign goods, a veritable smuggler. He harbored in the rat a little imp, the flea, and said rats being infected with the plague germ, permitted, not voluntarily, the fleas to draw from his blood the germs of the plague; and fleas, having a strong liking for human blood, translated themselves at the first opportunity to men and began a thorough system of inoculation; and they did it scientifically, as witness the great loss of life from said disease in California. The introduction of this plague into this country was due to the ignorance, unconsciousness of the steamship companies plying from the far east to our far west in allowing their vessels to become infected and overrun by rats. Destroy the rodent of whatever species found, and the plague ceases; then your epidemic is stamped out. Now what becomes of the fomites theory?

Again, a few years ago typhus fever was supposed to originate in overcrowded, ill-ventilated ships; in the ship's bilge water; in the filthy condition of the emigrants. But germs do not start *de novo;* some living thing must have been harboring the spirochete. He is found and he proves on inspection to be our sometimes bed-fellow, detested and abhorred by every good, clean, neat housekeeper, the *Cimex lectularius,* the bed-bug; and now is accused and rightly of being the vaccinator of the germ typhus. Again what becomes of the fomites theory?

A few years ago the domestic fowl was charged with the crime of being the originators and distributors of diphtheria, and off went their heads; the bodies to market. Our friends of the *Gallus domesticus* fraternity have been exonerated. A few years ago I heard a member of the board of health say that even the canary bird must not be allowed to remain in the contagious sick-room, and if so left must be thoroughly plucked before being allowed to go into an aseptic room for fear it might carry with it some of the germs and be the means of conveying the infection. You have a legal right to believe as much as you please, and what is not rational and common sense cast out.

Only a few years ago when variola was present in some sections of the country it was the proper thing to wear little bags filled with asafetida strung around the neck to keep away the evil germs of small-pox. It is doubtful which evil was the least. What superstition! How gullible we mortals are.

The germs of scarlatina and diphtheria have been, and are believed to have been carried in letters, books and other things that have been in the room occupied by a patient, and handled and used by them. This is a popular belief and accepted by the masses, and assented to by the bulk of the medical profession and that without any scientific demonstration. Beliefs are not facts.

If the contagium of scarlatina, diphtheria, rubeola, varicella and other contagious diseases are carried in the clothing, hair and other things handled in the sick-room, then the physicians are the greatest cul-

prits extant in disseminating these diseases in the community. How many doctors believe it?

Some years ago, some ultra, ardent, overzealous physicians, in order to prevent their being the source of carrying the germs from their patients to the innocent children of their patrons, used to wear white gowns covering their bodies from the neck to the feet, and a hood for the head and a muzzle for the mouth; in fact, they were covered complete excepting eyes, all done for what? Effect or misguided knowledge; and what results? How many physicians visit their patients at this date arrayed in angelic garments of shining white? Not one. Why? Because they do not believe wholly in the theory of fomites. How many doctors know for a certainty, not believe, that diseases are thus disseminated?

Before accepting such a dogma get absolute proof. Take no theory, no hearsay. Be not superstitious. The medical profession is broken-backed now from carrying theories and superstitions. How many persons reach adult or middle age who have not had scarlatina, rubeola or varicella? Not 5 per cent. How many persons tell you that they never have had scarlatina, rubeola, etc. who do not know, only mother said so? How many have these diseases and are not aware of it? So slight that they have no complaint? Many, many many. How many children diseased go to school during an epidemic, through a whole run of the disease? Hundreds.

Four or five years ago during quite an extensive epidemic of scarlatina, milk was charged as the fomites of conveyance. It was asserted that the disease was on or near some of the dairy farms and that some of the employees in handling the lacteal fluid dropped germs into the milk pails or milk cans and said milk was delivered to the unsuspecting unimmuned children. Then the wiseacres set up a hue and a cry. The boards of health howled, and the newspapers made a grand chorus of dolorous discords. What did it amount to? A grand scare, a financial loss to the dairy farmers; some ephemeral glory to the health officers; and in due course of time when the living fomites ceased to be, and all the unimmuned had had the scourge, the disease died out, was stamped out by the vigilance of the health department and the press; and who saw a single germ? No one. If they did why did they not show them?

During said epidemic a mother brought her son to my office stating that he was unaccountably nervous, with no apparent cause. I had him stripped to the waist and when he came into the light I remarked a good bright color; "yes," the mother said, "he is a pink and white boy." "But," I replied, "not just this shade of pink"; took him to the window, examined his throat, and found the characteristic color. I remarked: "This boy never had scarlatina? No? Well he has it now." "I ain't sick," said the boy. "Well, no, but you have the scarlet fever." He still insisted "I ain't sick." All the same I advised the mother to take her son home and if there was any rash the next morning to call me. But the order was there and then given for me to call the next day, which I did, and found a good typical rash with the red throat of scar-

latina. But the lad still insisted that he was not sick and requested to be allowed to go to school. He was quarantined for four weeks instead, and isolated to one room in the rear end of the house. The boy was never sick in the sense in which that word is usually used. This case would never have been detected if the mother had not brought him to me for nervousness. How many just such cases that are never found out go right along to school?

During the same epidemic, at the tail end of it, a boy, aged 10, was brought to my office by a former patient of the same age. I looked at them and inquired which one was sick. One said, "it's me." "What's the trouble?" "Oh, I'm swelling all over"; and sure enough. I said to him, "You have been sick." "No." "Yes, had scarlet fever?" "No sir, never sick." I then said: "Five, six, or seven weeks ago were you not sick so that you had to stay out of school?" "Oh yes; I went home one afternoon, vomited, had headache, etc. Well the next day but stayed at home, and went to school on the morning of the third day"—and continued in school the remainder of the disease and the balance of the term. Desquamation was slight, not sufficient to attract any attention of the family. Now how many children are doing the same thing during every epidemic? Sick and know it not: scarlatina. And these are the living, moving fomites.

Early in the spring of this year a young lady came to my residence, a cold, chilly day, in a partially open auto. She was very hilarious, in good spirits, said grandmother sent her; nothing the matter, just a slight rash with much general itching, and had been two days, and she out auto riding every day. On examination I found the characteristic rash and usual red throat. When told she had scarlatina she took it as a joke. But when she was informed that she must go home and be quarantined for four weeks she was indignant and protested that she was not sick; and she was not during the entire run of the disease. There was no doubt as to the correct diagnosis in my mind. A sister of the above patient was kept in the house and at the end of the seventh or eighth day I examined her throat and there was the characteristic color with no soreness, and but a very slight rash. She was never sick in the common acceptation of that word, during the whole of the isolation. Both had good appetites, sleeping well and in the best of spirits all the time. It was only by accident that these two patients were discovered and quarantined, to keep within the law. The first patient was sent to me on account of the itching. A physician would not have been consulted if the grandmother had not insisted on her coming to me, I being the family physician. And there are scores of just such cases during any epidemic of scarlatina.

If the first patient had been consulted she would not have gone to a physician, and both patients would have gone about their daily occupations giving all their unimmuned friends a chance to contract the disease. It is the persons having the disease in such a mild form as not to require a physician or to be noticed by any member of the family and who go about their daily vocation, to school, to the shop, or shopping,

or visiting friends, who are blameable for the spread of disease. The moving, living fomites.

It is laughable to notice the public press saying the board of health is stamping or has stamped out the epidemic. The disease ceases to spread when all or nearly all the susceptible have had the disease or are immune and we have an end of the epidemic. No more trouble until the babies have grown up to the age of from 5 to 10 years when another outbreak, and so on *ad infinitum*. So it has run for the last forty-five years of my professional life, and back as far as you can obtain any literature on the subject and is likely so to repeat itself into the great unknown future. There is no use running from the disease when it is in a mild form, for sooner or later it gets all the unimmuned. The burden of proof is laid on those who say fomites are the carriers of the germs of the disease. Give us proofs and not theories. Facts are what we want.

I have some very serious doubts as to whether variola can be disseminated through the medium of fomites. We often hear of persons going to the health office or to the office of a physician for a diagnosis of a slight eruption on their faces, are not sick enough to be housed and yet have variola. These are the living fomites who raise a little tempest in their neighborhood when the truth is made known that they have small-pox.

Rubeola is sometimes so slight that it is only as a coryza, a little sneezing, a slight cough, a trace of eruption in the mouth, nothing in the general condition to call attention to it by the parents, and these living fomites run about, mingling with their little friends, go to school, and if they have enough of the virus, more than needed for the home consumption, inoculate the whole neighborhood.

It is these living, moving, sentient fomites, having the active germs in their throats in the anterior and the posterior nasal passages, who are not sick enough to require a physician or attract attention of the members of the family, just a little indisposed, who go to school or their daily occupation, who are blameable for the contagium being spread abroad. Again the living, moving fomites.

It is a great injustice to compel the bread winner for the large household of dependents to be quarantined for from three to eight weeks, and thereby deprive him from earning money to buy food for the prisoners. The public is loath to give them food to eat, and the charitably inclined are forbidden to go to or enter the house of the afflicted with contagious diseases. In fact I have known families to suffer for food on account of quarantine.

The yellow or red card tacked to an outside door strikes terror to the hearts of those who would go and render assistance, and then if they do go would be liable to arrest for violating an unjust health law. Many persons will run by a house or cross over to the other side of the street if they see a red card on the door. And what good does it do?

Alvah H. Doty, M.D., health officer of the port of New York, says: "During the outbreak of small-pox and typhus fever in New York City in 1892-93 the most careful and painstaking investigation was made in

connection with every case brought to the notice of the board of health. As a result satisfactory evidence was constantly being presented to show that the diseases were transmitted by personal contact ('living fomites') and not by the clothing and effects of the well person." If space allowed I might quote much more from Dr. Doty.

The examination of the school children is done in such a poor, slipshod manner that it is worse than useless. Whenever a case of variola, varicella, rubeola, scarlatina or diphtheria is reported in the neighborhood of any school, every child entering and leaving the school should have a thorough examination by an experienced expert, if they really want to prevent dissemination of the disease, and this should be done every morning to be of any value. The cost should cut no figure. The saving of human life is the only thing to be considered. Many children go to school having the measles, chicken-pox, scarlet fever, mumps, whooping cough and perhaps small-pox *during a complete run of the disease* and are entirely ignorant of the affliction. When a child goes to school having the complaint and sits beside a healthy unimmuned seat-mate, or mingles with the children in their games, he or she is very apt to communicate it to unsuspecting, innocent companions. No need of charging it to the clothing fomites; the living, walking, diseased are the disseminators of the virus. You might as well talk about stamping out the north wind as to stamp out an epidemic of scarlatina or measles under the present régime. The only way to immunize a locality, city, state or nation is to vaccinate; for vaccination for scarlatina, measles, chicken-pox, mumps, whooping cough and diphtheria will be just as effectual and immunizing as vaccine virus is against small-pox. Then and not until then will we be able to control all contagious diseases.

Again, paper money has been, and is now thought to be a great conveyor of contagion. How many physicians would refuse to take their honoraria, no matter how ragged or dirty, nor by whom offered, nor of what ailing? Queer, ain't it? Rather a reflection on their belief in the fomites theory.

How many bank tellers or government money inspectors are ever attacked with contagious diseases that could positively be traced to their occupation of handling money? I think all of us would accept tainted money and say nothing, and I would pocket infected money (and so would you, reader) and take my chances.

I noticed in a newspaper recently that a microscopist had found on a $5 bill 80,000,000 microbes. I suppose a $10 bill would have 800,000,000 and a $1 bill 20,000,000; but not one of them was malicious, just common, every-day microbes, a really essential part of the universe; and without them the *genus homo* would soon come to his finish. I must say that in this great find not a germ of any contagious disease was demonstrated. The above does not talk very loud against fomites.

Now as to fumigating. It is all bosh, works great inconvenience in many households and does no good, excepting giving employment to the fumigators. A few years ago the burning of sulphur in a supposed infected room was the order of the day. A longer time ago the burning

of tar in a contaminated house was the thing. Now obsolete. If it was good then why not now? Smarter, are we? Perhaps!

But we must have something new or we are behind the times, are old fogy. Now we have formaldehyd fumigations; what next? You say, as years ago they said of disinfectants, it kills the germs. Does it? How do you know a living germ remains in the sick room twenty-four hours after the last vestige of the disease is out of the patient? Living germs are in the living patient, and as yet I have seen no positive evidence of their viability lasting forty-eight hours. To fumigate, to clean out your infected apartment, open the doors and windows wide, twenty-four to thirty-six hours, and let the fresh air circulate freely, and the oxygen-laden atmosphere will soon destroy the life of the bacillus. You may take exceptions to this position; I expect you to, but be sure to give the positive proofs to the contrary.

How many physicians make a complete change of outer raiment, or undergo a fumigation after visiting a patient having a contagious disease? Speak out! They may be a little nervous about going to their own homes, to wife and children, but do not hesitate to visit the homes of their patrons. Now don't deny it, you know it is a fact, as well as I.

If contagium can be carried in the clothing then physicians are the most flagrant disseminators of diseases extant. Oh! you do not away down in your better thinking self believe it, and if you do then you are not consistent and I think you are not a scientific observer and investigator. You are thinking and believing as the uneducated, superstitious laymen; folklore and hearsay from your childhood.

Yes, we of this generation have found the specific germs of nearly all diseases the human being is heir to, but just how they are being propagated we know not. Some are being solved and in the course of time all will be.

It is very simple now to understand how yellow fever, cholera, malarial fever, bubonic plague, typhus and typhoid fever are scattered, and we laugh at the strenuous efforts that governments, boards of health and shot-gun quarantine have put forth to circumvent the spread of some of these diseases. The physician of the future, fifty years hence, will smile when reading the literature on contagious diseases in the past; how epidemics of scarlatina, diphtheria, small-pox, measles, etc., were stamped out by our vigilant boards of health and the daily press. My remedy is to isolate the individual, not the house or neighborhood; or send patients to a proper hospital; thoroughly inspect the ears, eyes, nose and throat and body of every inmate in the house of the infected, and isolate any found with the slightest variation from health. Do this every day until they all have passed the period of incubation. It will cost the *Geld,* but not so much as undertakers' bills. The state or county or city should pay all such expenses incurred and in ample amounts.

But the millenium has not come, and is a long ways off, and when all diseases are conquered and no more suffering, and there are no more sick, lame, deaf and blind, then the "earth will be rolled up as a scroll and melted with fervent heat."

I know the great body of medical men will disagree with me (they are in the superstition age yet), criticize me as being radical and unscientific, and hurl a thousand epithets at me; but remember when so doing facts and proofs first, not theories and popular beliefs. Also remember that the advocates of vaccination were considered crazy heretics in the profession. Remember that the idea that the mosquito, not fomites, was the conveyor of malarial and yellow fevers was laughed at and ridiculed and those who advocated these facts were called visionaries and lunatics. Also remember that men have died sacrificing their lives to demonstrate these facts and it will be done again to demonstrate the fact that fomites do not hold the germs of diseases. And after all the rememberings you may concede that I am right: that living, moving fomites, not dead ones, are the carriers and disseminators of contagious diseases.

I have studied, observed and watched for forty-seven years to find out the way contagious diseases are communicated from person to person; from one locality to another; from one nation to another, and my firm belief and conclusions are as above given. *Errare humanum est.*

"The people (including doctors) that walked in darkness have seen a great light: They that dwell in the land of the shadow of death, upon them hath the light shined." If disease and death should ever be blotted out, and life continued indefinitely, what would the results be? Death is necessary for the existence of the animal world. If no deaths should occur for 500 years the earth could not hold the human race. So death is essential to make room for the coming unborn hordes. It is just as natural to die as to be born. Physicians alleviate human sufferings but very seldom save human life. The credit is due to *vis a tergo*. Nature's pruning hook cuts off the weaklings, giving a better chance for the survival of the fittest.

I have written the above article in order to get a free discussion. I am open to correction and just criticism. My observations for forty-seven years of active practice of medicine have convinced me that we are away off as regards contagious diseases, their propagations and disseminations.

APPENDIX.—I do not believe there ever was a case of tuberculosis caused by drinking bovine milk. Does anyone believe it? Then prove it.

ADDENDA.—Pasteurized milk is a deception and a snare to the human stomach. It is a fraud perpetrated on babyhood, and an insult to the cow. It is productive of more diseases than it prevents.

PLEURISY FROM THE MEDICAL STANDPOINT*

THOMAS E. MACAULEY, M.D.
ELGIN, ILL.

You are called to the bedside of an adult. He gives a history of having had a chill or of feeling chilly, previous to which he was feeling comparatively well. He now complains of a sharp, stabbing or stitch-

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like pain in the chest. This pain is increased by movement, or by taking in a full breath. He has a cough that is dry, suppressed and painful, so much so that he endeavors to support or hold his side when he coughs. He may be lying on the side affected or sitting up and leaning forward and to the side involved. Aside from this sharp pain, he feels fairly well and it is largely for its relief that he has called a physician.

You find that he has a temperature of 99.5 to 101 or 102; pulse fast, firm and tense; facial expression of pain and anxiety; respirations increased in frequency, shallow and jerky. Inspection also shows deficiency of movement of chest walls with increased abdominal breathing. Percussion normal. Auscultation reveals a jerky friction rub over some portion of the chest wall. It sounds superficial and close to the ear. You have patient hold his breath, and the rub disappears. Your diagnosis is acute pleurisy without effusion.

In forming your diagnosis you must think of and exclude acute pericarditis, intercostal neuralgia, rheumatism or the intercostal or pectoral muscles, and direct injury to the chest walls. You also endeavor to ascertain if the case is one of primary pleurisy or is secondary to or associated with some other disease.

But suppose this same patient did not call you until he had been ailing several days or a couple of weeks. He gives practically the same subjective history, excepting that now he is comparatively free from pain, his cough is not so frequent or painful and more moist, and that he feels much better than he did some days ago, only that he does not gain in strength, is somewhat short of breath, and breathes better when partly propped up in bed.

What do you find on examination? He may have subnormal, normal or elevated temperature, pulse fast, weak and easily increased in frequency on exertion Respirations increased with a deficiency of movement in the chest walls, especially on one side. Palpation may show lost vocal fremitus. Percussion shows dulness to absolute flatness over some portions of the chest and hyper-resonance over others. Auscultation, distant, coarse, bronchial or tubular breathing or entire absence of sound. You may get here and there friction rubs at the borders of flatness, especially on deep breathing. The heart sounds are normal, but apex beat is not in normal position.

Again, we will say, your diagnosis is pleurisy—pleurisy with effusion. But before reaching the diagnosis, you must have excluded all pathologic conditions that might present one or more of the physical findings, for we really reach a diagnosis in most cases by exclusion, that is, we endeavor to prove what it is not. Is it pneumonia with consolidation? Is it a pericarditis with effusion? Is it an aneurism or tumor? Is it an abscess outside of the pleural cavity in the chest walls or in the lung? Is it an effusion secondary to or accompanied with heart, liver or kidney disease, or is it due to a direct extension of some pus lesion elsewhere, bearing in mind that not all cases of pleurisy give a history of pain and that the apex beat may be displaced by solids as well as fluids. And if you are able to exclude all of those possible condi-

tions, something not easy to do, and the details of which I cannot enter into because of limited time, you may want a blood count, a urinalysis or a skiagraph, or you may want time to read up on the subject.

Still holding to your diagnosis of pleurisy with effusion, your next and very important point is to determine the nature of that effusion. Is it serous or is it purulent? How are you going to find out? A leukocytosis, sweats, elevation of temperature, coated tongue and loss of appetite will lead you to suspect pus. Your physical findings prove little. The only reasonably sure plan is to insert a large sized hypodermic needle into the part of most flatness, and you may have to repeat the puncture several times before you find fluid, although you were almost sure it was there, by the physical findings. You withdraw either a more or less lemon colored fluid that coagulates on standing or boiling, or you get pus, empyema. The diagnosis seems easy on paper, but in actual practice you will have done a lot of thinking and a lot of worrying before you reach the surgical side of the question, and those difficulties and worries are greatly increased when the patient is a child or an infant.

Pleurisy in a child is, in a large percentage of cases, accompanied with or secondary to diseases elsewhere, and the coexisting disease will more or less obscure or mask your physical diagnosis. You are less liable to detect a friction rub and you cannot make them hold their breath to differentiate. You are less liable to get a history of pain, and that pain is more apt to be a transferred pain, to abdominal walls about the appendix or umbilicus, and in speaking of transferred pain, remember it may be transferred to the chest when the real lesion is in the abdominal cavity. The differences in the normal physical findings of a child and an adult may mislead you if you are not on your guard. Heavy percussion in a child will not bring out the true findings, you will get a transferred dulness or tympany.

Serous effusion is much less common in childhood, and under three years is quite rare, while on the other hand, purulent effusion is much more common than in the adult, and the rapidity with which the effusion increases will often unpleasantly surprise you. The crying of the child, the fear and discomfort of being handled, the weakness of the patient, along with the almost universal objection of parents to entirely strip the patient's chest of all clothing, tends to make you superficial in your examination and to obscure your diagnosis.

It is in such cases that you stand a very good chance of having a consultant called in, and be shown a chest wall with intercostal depressions obliterated and apex beat where you never supposed it could be. All plain enough, now that your attention has been drawn to it, and you feel as full of mortification as that child's chest is of pus. But you may be mighty thankful if you considered the trouble somewhere in the chest and not as often happens, treating the patient for typhoid or malarial fever or appendicitis or some stomach or bowel trouble.

Your main fault in this case was that you were superficial in your examination, and the few physical findings obtained were not cor-

rectly interpreted. The flatness on the right side you thought was the liver, and the real flatness on the left side you obscured by your heavy percussion, bringing out stomach tympany. Possibly you thought the patient only a little slow in recovering from some previous disease, or some marked disease elsewhere drew your attention from the real trouble. You were careless and in too great a hurry, and you allowed the case to drift along, hoping something more definite would show up, or the patient get well in spite of you and your snap diagnosis.

Quite often the only, and very important duty of a consultant is to lift you out of a rut, and it takes an exceedingly diplomatic consultant to make the family believe that you were doing everything that could be done in this case, and that your diagnosis was correct, and that in every respect you are a shining light in the profession, and yet at the same time give them to understand that your light casts no shadows in his presence.

Medical Treatment: morphin hypodermatically is nearly always called for in the adult in the early stages, in sufficient quantity to relieve the severe pain. Aconite in small doses frequently repeated, in the full-blooded, robust patients. Clean out the system with calomel, followed by a saline. Absolute rest in bed; firmly strap the affected side with adhesive plaster; apply the ice bag or hot water bottle, as most convenient and agreeable to the patient. Other medication will be indicated by the causative factor be it pneumonia, rheumatism or tuberculosis. I do not believe the disease can be aborted by any line of heroic treatment. I have very little faith in the use of potassium iodid for the absorption of the effusion. Good food, good nursing and good hygienic surroundings will do much to aid recovery, and at all times be very cautious of a too depressing form of medication.

When fluid is present in any considerable quantity and does not seem to lessen but rather to increase and embarrass the function of the lungs and heart, it should be withdrawn. If a diagnosis of empyema is proven, the case is at once a surgical consideration.

In infancy and young children you will be less likely to need anodynes, but if needed, use them, guardedly of course. A more supportive line of treatment is indicated, the younger the patient, and a more early withdrawal of the fluid, not only for the comfort and safety of the patient, but because of the early damage of the chest contents. As a rule cold applications will be contra-indicated in young children. If pain is severe or moderate, a good flax-seed poultice, to which is added a small quantity of mustard, will be serviceable to either young or old. A snug bandage about the chest may be used to good advantage instead of strapping, but do not impede the respiratory action too much by such bandage. Keep down tympany by keeping regular and free action of the bowels.

Do not call every pain in the side a pleurisy.

EDEMA OF THE PROSTATE

G. KOLISCHER, M.D., AND H. KRAUS, M.D.
CHICAGO

Edema of the prostate, rather scantily discussed in the text-books, deserves in fact more consideration. The association of inflammatory edema of the gland with gonorrheal prostatitis (prostatic gonorrhea?) seems to be such a self-evident proposition that writers do not care to go into details about its diagnosis, as if its recognition were of no great clinical importance.

The edema subsides with the disappearance of a prostatitis, as the treatment for the latter will of course influence the former. It is therefore of little practical significance whether such an inflammatory edema is properly diagnosed or just surmised.

Contrary to the acute edema, the chronic edema of the prostate is of great clinical dignity. It is apt to simulate other conditions, especially hypertrophy of the gland; such an oversight would result in grave therapeutic error. Observation proves the occurrence of chronic prostatic edema in elderly persons. Apparently solid tumefactions in the prostates of such individuals vary in consistency and size in examinations made at intervals for some length of time.

Such supposedly hypertrophied glands at certain times will be found reduced to normal size while at other examinations considerable enlargement will be found. Furthermore, careful palpation of prostatic edema will reveal a consistence characteristic of this pathologic condition. These edematous glands do not present the uniformly hard, unyielding consistence of a true hypertrophy, but rather are of a doughy quality. In marked cases the palpating finger tip leaves an impression that lasts for some time. The endoscopic inspection of the rectum, in some pronounced cases, shows the mucosa of the anterior rectal wall edematous and soggy, and its folds are smoothened out.

Energetic palpation of the gland will produce another phenomenon: the pressing finger tip will feel a superficial yielding layer of some thickness and with continued pressure one will finally obtain the sensation of some hard underlying tissue. This is the central part of the gland not swelled by edema. Hence in such cases the increased size of the gland is not due to any addition or growth of firm tissue, but to the imbibition of the organ with fluid, in other words, the intumescence of the prostate is due to edema.

These edemas are of special importance in the age of prostatic hypertrophy on account of their simulating this condition. The swelling of the gland makes the patient conscious of his prostate, he is subject to more or less tenesmus of the rectum, the urinary calls are excessively frequent, the natural passage of urine is difficult, and retention of urine is found in the bladder, in short all the symptoms that point to a pathologic enlargement of the prostate are present.

The possibility of an edematous enlargement must be considered if the symptoms mentioned diminish, or disappear, at times; but this is

not pathognomonic of edema, as the same changes may be observed in true prostatic hypertrophy in which transitory hyperemia may lead to an aggravation of the symptoms, that will ease up after congestion is relieved. If the edema is moderate, and of a more general character, that is, not confined to the superficial parts of the gland, a differential diagnosis between edema and true hypertrophy is very hard to make.

In some cases cystoscopic examination will allow positive diagnosis. If the cystoscope reveals a solitary, or a multilocular, prostatic tumor protruding into the bladder, and also that the mucosa covering these protuberances is not edematous, then there is no room for doubt that we have to deal with true prostatic hypertrophy. Cystoscopic diagnosis of edema of the mucosa covering a prostatic intumescence does not prove the exclusive existence of prostatic edema, nor does it deny the diagnosis of hypertrophy, as this edema of the mucosa is quite often a feature concomitant with true new formation of tissue, especially if this should be of malignant nature. Occasionally the differential diagnosis between prostatic edema and true hypertrophy can be made only at the time of operation. Then interesting observations may be made.

Cases of edema are now and then found with all the classical symptoms of prostatic enlargement and subsequent urinary obstruction, and, in a degree, calling for operative interference. By the suprapubic method the bladder is opened and the trigonum exposed. Striking changes on the prostatic tumor will be observed. The prostatic intumescence, that has just been felt and seen projecting into the bladder cavity, begins to diminish in size and finally disappears under the eyes of the operator, so that in a short time the internal urethral orifice is flush with the trigonum, without any intervening elevation. We have absolute demonstration of no further existence of urinary obstruction. Finally nothing remains but an insignificant atrophied prostate, that can just be felt and outlined by bimanual palpation, two fingers being placed in the rectum and the other hand palpating from the inside of the bladder, being made accessible through the incision into the anterior wall of the bladder.

Also the thickened, spongy mucosa that covered the prostate in a very few minutes loses its velvety appearance and smoothens down, regaining its normal slickness and sheen. This latter phenomenon can be demonstrated very clearly if one operated by "blue extremities," a blood-saving method which we lately employ in all genito-urinary operations.

Evidently in these cases, the prostatic intumescence was due to venous engorgement and consecutive edema. The free incision into the bladder wall led to venous depletion, and to draining off the edema. Experience has proved to us, that such a condition may be suspected during the preliminary stages of the operation. Such bladders show on the outside a smoothness of the surfaces. Palpation reveals smoothness of the bladder-wall, and if the bladder is opened no trabeculization of any appreciable degree can be observed. In other words, no labor hypertrophy of the muscular coat is present; such a labor hypertrophy being the result of the numerous attempts of the detrusor to overcome a permanent obstacle to the urinary flow.

Edema of the prostate on account of its periodical disappearance does not furnish such a permanent obstacle as leading to hypertrophy of the muscle bundles which manifests itself either as concentric, or eccentric, hypertrophy of the bladder-wall. The practical consequences of the discovery of the conditions mentioned above, means that the intended prostatectomy has to be abandoned in favor of a simple cystotomy.

—The Chicago department of health has received a letter from George Shaw Cook regarding the attitude of Christian Scientists toward quarantine of contagious diseases and the enforcement of quarantine regulations by health officers. Mr. Cook was asked to contribute something to the bulletin for publication along these lines. In his letter, which bears date of November 16, he says: "In justice to Christian Scientists as a class I should like to say that it is a rule with them to report contagious diseases to the authorities and to conform strictly to quarantine regulations when such regulations are imposed. Christian Scientists have been requested by Mrs. Eddy to call a physician in cases where contagion is suspected, and, if such cases are pronounced contagious, to see that they are promptly reported to the health board, and Christian Scientists generally are particular to observe state laws regulating such matters. This is because Mrs. Eddy and Christian Scientists as a class are considerate of the feelings of their neighbors who do not believe that contagion is mental."

—The Food Inspection Bureau issues the following note of warning to the dairymen and milk dealers of Chicago: The months during which an increased number of cases and deaths from diphtheria and scarlet fever occur are at hand. The reports on file in this department show that such increases are now actually taking place. As the spread of these diseases is quite commonly due to negligence among those handling the food supplies—especially milk and milk products—your especial attention is directed to the need of *extraordinary* care in this regard, beginning now and continuing through the coming season of cold weather. Your aid is particularly desired in the matter of maintaining proper and efficient quarantine of such cases of these diseases as occur among the dairymen or milk dealers, their employees, families or near neighbors. Protection against the spread of these diseases will be greatly facilitated by *prompt reporting* to this office of any existing cases. This Department, through recent experiences in the typhoid situation, has learned to regard the cooperation of milk-wagon drivers as of the greatest assistance in the way of discovering unreported cases in the city. It is the earnest desire of the Department that this valued cooperation shall continue. Milk dealers and their delivery-wagon drivers are asked to report all cases of these diseases which may be discovered on their routes, especially those in premises which fail to bear the contagious disease warning placard. Such cooperation will not only afford better protection to the public, but will also be of undoubted benefit to the milk trade itself. A wise milkman will readily understand that an unreported and therefore uncontrolled case of contagious disease on his route is a distinct menace to his whole trade. —*From Bulletin, Chicago Department of Health.*

ILLINOIS MEDICAL JOURNAL

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JANUARY, 1911

WHAT ILLINOIS NEEDS IN MEDICAL EDUCATION

The Physicians' Club of Chicago, on Friday evening, Dec. 2, 1910, dedicated a meeting to the topic "What Illinois Needs in Medical Education." From those in attendance we learn that the meeting was a success in every way, and subjects of fundamental importance were discussed. The main address was given by Dr. Edmund J. James, President of the University of Illinois, and it is to this address that we now call particular attention. It appears on another page.

First of all Dr. James laid down the great principles of organized society especially as they refer to the practice of medicine. He pays a tribute to that grand product of the University of Pennsylvania, the late Dr. William Pepper, properly designated as one of the most far-sighted and one of the most truly statesmen-like medical men who ever lived. From Dr. Pepper and Prof. Lorenz Von Stein, of the University of Vienna, Dr. James has fortunately drawn much of his inspiration which seems destined to do great things for the cause of medical education in the new world. For we do not, by any means, confine the influence, which now seems ready for development, to the city of Chicago, or the State of Illinois. We have always believed that this state holds a paramount position with reference to the educational progress of the new world, and it

is for this reason that we have so strongly protested against the low standards and petty politics which have influenced the authorities in this state for the past eighteen years.

Dr. James in the following language lays down three important propositions which should always be held up as the ideals to be attained in the medical profession.

"I maintain first of all that the future physician should be an educated and cultured gentlemen, able to do his part as a thoughtful citizen of a democracy in the support and development of our social and political institutions

"I maintain that the physicians above all other men, not even excepting the clergymen, if of the right type and inspired by the right ideals, might do more to raise social and ethical standards than the members of any other profession.

"I emphasize the consideration, that if we were ever to have a reasonable policy in regard to public health, we must rely for expert advice on the physician, and unless he were an educated man, aside from his profession, unless he had a broad outlook and wide vision he would be an unsafe counselor in all these public matters.

"I urge again the same consideration from a little different point of view, namely, that the medical profession as such is the keeper, the protector and the promoter of some of the most important and far-reaching interests of society and that the members of such a profession, if it is to do its duty toward the community and the sacred interests dependent on it, must have the education, the training, the culture necessary to perform efficiently this great social duty.

"Some people distinguish between the scientifically and the practically educated physician. I cannot for my part concede that there is or ought to be any such distinction."

Dr. James' idea of the duty of the university towards the state was expressed in the following language: "If the university will set before the community, therefore, and insist on this standard of, first of all, a liberal education; secondly, a thoroughly scientific training; thirdly, a practical training, then it will have done all it can toward preparing and sustaining a medical profession for this great work in the community and the state.

"It goes without saying that hospitals and clinics and dispensaries are necessary elements of this training. It also goes without the saying that hospitals organized for the purpose of investigation and teaching are undoubtedly for certain purposes far better in this scheme of medical training than hospitals which do not contemplate as a serious part of their work either of these ends."

Dr. James explains the failures of the medical department in the following language: "Owing to certain clauses in the contract it was difficult for either the university or the College of Physicians and Surgeons to take a very aggressive attitude in advancing standards; but of

course the real difficulty was that neither institution had any money to put into the enterprise. The whole experiment was dependent absolutely on the income from student fees.

"The experience of the last fifteen years has demonstrated beyond a doubt that a modern medical school cannot be established and maintained on any such basis, and the time has come therefore, in the opinion of the university and of the College of Physicians and Surgeons, when a change was absolutely imperative. With the consent, indeed one may say, upon the initiation of the College of Physicians and Surgeons, the contract made ten years ago has been absolutely abolished and the medical school has passed as completely into the control of the board of trustees of the University of Illinois as is the school of engineering or the school of agriculture.

"The university has leased from the College of Physicians and Surgeons their property on the west side as a plant for the use of its medical school. This lease runs for one year and may be renewed on the same terms for two two-year periods. The University pays the College of Physicians and Surgeons a rental for the use of this property which is based, roughly speaking, on the necessity of meeting the interest charges involved in mortgage and bonds secured by the property, and taxes, insurance, etc., and certain floating and now due indebtedness."

Regarding the development of the medical department Dr. James says: "The only thing that one can say is that the trustees, if they get this money, will use it to develop the best medical school they can with these resources. What particular things they will do must be decided by them when the money is at their disposal.

"I should guess that they would organize a strong force of professional teachers to handle the scientific subjects in the school course such as anatomy, physiology, chemistry, pathology, etc. I should guess that they would bring to the city of Chicago or find them here a group of men whose cooperation in this work would raise perceptibly the level of scientific work in the field of medicine in the city of Chicago.

"In a word, I should guess that the outcome of this appropriation would be the beginning of new things in medical education, not only in the University of Illinois but in the City of Chicago, the State of Illinois and indeed the whole Mississippi Valley.

"If the commonwealth of Illinois will begin the policy of supporting medical research and medical training through the University of Illinois, I believe we shall have made another great step forward toward the time when the city of Chicago will be a recognized center of medical research, medical training and medical skill second to none in this country or indeed to the world."

This proposition is now up to the state, the people and the medical profession and we trust will have the hearty support of the members of the Illinois State Medical Society.

THE EXAMINATION OF APPLICANTS FOR LICENSE TO PRACTICE MEDICINE AND SURGERY IN ILLINOIS

As indicated by the statements printed below, a remarkable variation from the usual has taken place in the examinations for license to practice in Illinois. In order that our readers may be conversant with the latest development, we reprint first, a table giving the results of all examinations held by the board for the past nine years, together with a summary of examinations for nine years. Second, the statement of Dr. Egan as it appeared in the *State Register* of Springfield. Third, comments on the result of this examination made by the Chicago *Tribune* under the heading "A Poor Showing." The figures mentioned in the *Tribune* refer only to the Chicago medical colleges represented in this examination. Fourth, an editorial in the Chicago *Tribune*, under the heading, "Graft in a Great Profession," and bearing directly on the laxity of the board in granting license to practice.

According to the headlines in Dr. Egan's communication as it appears in the *Illinois State Register*, 55 per cent. of those examined failed to pass. In the text it is stated that 45 per cent. failed to pass. The October, 1910, Bulletin of the State Board of Health, just received, on page 364 contains the following statement of the October examination: Present 80; passed 34; failed 41; incomplete 5. If the mysterious five are counted, the percentage of rejections was 53.3 +. Such contradictions are not infrequently found in the statements issued from the office of the State Board of Health. It is boldly stated that while "Illinois rejects a greater number than other leading states, the percentage rarely goes over 25 per cent. and usually ranges from 10 to 20 per cent." It would be interesting to have the secretary explain the sudden increase from 25 to 56.6 per cent. As the Chicago *Tribune* remarks editorially, there are strong reasons for believing that the report of the Carnegie Foundation, stigmatized time and again by Dr. Egan as a pack of lies, has had much to do with stimulating the board to do its duty.

It has not been an easy matter to compile the statistics of the results of the examinations held by the Illinois State Board of Health since 1897, when Dr. Egan first took office in that organization. As far as we know, no public statement of the work of the board in licensing physicians appeared until 1902. In 1903 a report on Medical Education was issued by Dr. Egan, and on page XLI we find that in 1902, 589 persons were licensed, thirteen rejected and one endorsed. The percentage of rejections this year was therefore exactly 2.2 per cent. This is one of the few straightforward statements we have been able to find. In numerous other instances the reports submitted by the secretary to the *Journal of the American Medical Association*, do not correspond with the statements made in the *Bulletin* of the State Board of Health. issued semi-occasionally by the board, or to the statements made in the alleged annual reports which have been submitted from time to time by the secretary to the governor since 1903. The last of these annual reports which

we have been able to see is dedicated to the years 1907 and 1908. Besides it is a well known fact that a number of private examinations are given in the secretary's office, which do not seem to appear in the reports submitted to the *Journal of the American Medical Association*. They may appear in the *Bulletin*, but if so, they are so covered up as to make it absolutely impossible to tell anything about them. We are therefore compelled to apologize to our readers for the incompleteness of the tables here submitted. We are unfortunately compelled to draw our conclusions from these defective sources. Enough is shown, however, to prove conclusively that the statements made by Dr. Egan, are calculated to give a very different impression from that warranted by the facts. The facts as shown by the tables are, that not until 1908, did the rejections at any single examination amount to more than 24.6 per cent. About this time (1908) the pressure from such sources as the Committees on Medical Education of the American Medical Association, and the Illinois State Medical Society, became so insistent for greater care in granting licenses, that the board seems to have yielded somewhat, and a larger percentage of rejections has resulted in the past two years. The percentage of rejections in 1910 and 1909 has been exceptionally high for the Illinois Board and have at no time fallen below 9.2 per cent. at any single examination. The percentage of rejections for the entire year of 1909 was 17 per cent., and for 1910, including the much heralded October examination, was 18.1 per cent., excluding the October examination it was only 12.8.

In view of the frequent and drastic criticisms of the medical profession and medical schools in Illinois appearing almost daily in the secular press, it becomes painfully apparent as to who is the guilty party in giving Illinois such a bad reputation. We are only too glad to see that the laity are waking up and demanding that conditions be improved. We hope our readers will draw their own conclusions on this matter and act accordingly.

RESULTS OF EXAMINATIONS HELD BY THE ILLINOIS STATE BOARD OF HEALTH FROM 1902 TO 1910, INCLUSIVE:

1902

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
.....	.....	589	576	13	2.2	Report of S. B. H.

1903

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January 15.....	Chicago.....	48	43	5	10.4	J. A. M. A. xl, 1666.
May-June 1-3.	(No report of this examination can be found.)					
July 22	.....	153	149	4	2.6	Jour. A. M. A., xl
October 21	.....	49	43	6	12.3	Jour. A. M. A., xl.
		250	235	15	6.0	

1904

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January 27.....	Chicago.....	45	44	1	2.2	Jour. A. M. A.
April 25.....	Chicago.....	348	340	8	2.3	Jour. A. M. A.
May 4-6[1].....	E. St. Louis..	110	100	1	0.9	Jour. A. M. A.
June	Chicago	43	34	9	21.0	Jour. A. M. A.
October 12.....	Chicago	60	53	7	11.6	Jour. A. M. A.
		606	571	26	4.2	

1. May 4-6, East St. Louis. Secretary reports 110 examined, 100 passed, 1 failed, 4 were withheld pending investigation of college by the Board, 1 rejected on account of copying notes, 4 withdrew.

1905

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January 2.....	Chicago.....	45	34	5	12.8	J. A. M. A., xliv.
April 12[2].....	Chicago.....	38	33	5	13.2	J. A. M. A., xliv.
May 2.....	Chicago	417	410	7	1.7	J. A. M. A., xliv.
May 10.....	E. St. Louis..	124	119	5	4.0	J. A. M. A., xlv.
July 19-21.....	Chicago	119	111	7	5.8	1 incomplete.
October	Chicago	61	52	6	10.3	2 not rated; 1 withdrawn.
		[4]804	758	35	4.3	

2. Egan's Bulletin, Vol. 2, No. 2, gives number as 39.

4. The report of 1904 of the secretary to the governor would indicate that there were 823 applicants and 781 were successful; 42, or almost exactly 5 per cent., were rejected.

1906

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January 18-20...	Chicago.....	27	21	6	22.2	J. A. M. A., xlvi.
March[5]	Springfield....	4	4	0	0	..... 6 incomplete.
April 18-20.....	Chicago.....	125	115	6	5	J. A. M. A., xlvi.
May 23-25*.....	Chicago	394	373	21	5.5	J. A. M. A., xlvii.
May 2-4†.....	E. St. Louis..	136	114	22	16.2	J. A. M. A., xlvii.
July 11-13.....	Chicago	76	66	9	12	1 incomplete.
October[6]	Chicago	76	59	10	14.5	J. A. M. A., xlvii.
Total for year.....		[7]838	752	74	9.0	

* Bulletin states 374 passed, 16 failed.

† Bulletin states 136 were examined.

5. Probably examinations made in secretary's office.

6. The Board of Health Bulletin, vol. iii, p. 194, indicates that there were present 76; passed, 65; failed, 10. The Journal of the A. M. A., Feb. 2, 1907, page 448, contains a statement from J. A. Egan in which the total examined were 76; 59 passed, 10 failed; 7 did not complete examination.

7. The report of the Board for this year, made to the governor, would indicate that there were 848 applicants for certificates; 775 were successful, and 73, or about 9½ per cent., were not successful.

1907

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January	Chicago	36	31	4	11.4	1 application declined.
April 17-18-19..	Chicago.....	40	31	9	22.5	Egan's Bull. says 10 failed.
May	E. St. Louis..	104	97	7	6.7	Egan's Bll.: 105 present; passed, 99; failed, 6.
June	Chicago	338	320	18	5.3	J. A. M. A., xlix.
July	Chicago	63	50	10	6	3 incomplete.
October	Chicago	57	51	5	8.9	J. A. M. A., xlix.
Total for year.....		638	580	53	8.3	

1908

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January	Chicago.....	29	23	6	20.7	.....
April	Chicago.....	54	48	6	11	.....
May 12.....	E. St. Louis..	167	136	29	17.6	2 incomplete.
June 24.....	Chicago	362	326	34	9.4	2 incomplete.
July 22.....	Chicago	63	46	15	24.6	2 incomplete.
October 21.....	Chicago	79	61	18	22.8	J. A. M. A., ll.
Total for year.....		[8]754	640	108	14.5	

8. The report of the secretary for the years 1907-1908, made to the governor, would indicate that during these two years 1,411 applicants were examined for license, but no statement is made as to the number passed and rejected. Our tables for these years only account for 754 and 640. Total, 1,394.

1909

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January 18.....	Chicago	45	21	23	52.3	1 incomplete.
April 15-17.....	Chicago	126	111	12	9.8	1 withdrew.
May	E. St. Louis..	133	115	18	13.6	J. A. M. A., liii.
June	Chicago.....	291	263	27	9.3	1 withdrew.
July 20-22.....	Chicago.....	107	83	24	22.4	J. A. M. A., liii.
October	Chicago.....	84	52	31	37.3	J. A. M. A., liii.
		786	645	135	17.3	

1910

Date.	Place.	Ex.	Passed.	Rejected.	Pr. ct.	Source of Information.
January	Chicago.....	52	[10]31	17	35.4	1 withdrew.
April	Chicago.....	125	107	17	13.6	J. A. M. A., liv.
May 10-12.....	E. St. Louis..	116	100	13	11.5	2 incomplete; 1 withdrew.
June 9-11.....	Chicago	260	236	24	9.2	J. A. M. A., lv.
October[11]	Chicago.....	76	33	43	56.5	J. A. M. A., lv.
		[12]629	507	114	18.1	

10. Egan's Bulletin says 34 passed.
11. Reported in Illinois State Register of Dec. 4, 1910. S. B. H. Bulletin, vol. vi, p. 364, gives 80 present; 34 passed, 41 failed, 5 incomplete. Per cent., 54.6.
12. Total for 1910, excluding October report: examined, 553; 474 passed, 71 failed; percentage, 12.8.

SUMMARY OF EXAMINATIONS FOR NINE YEARS

FROM PRECEDING REPORTS

Year	Examined	Passed	Rejected	Per cent. rejected
1902	589	576	13	2.2
[13]1903	250	235	15	6.0
1904	606	571	26	4.3
1905	804	759	35	4.4
1906	638	752	74	9.0
1907	638	580	53	8.3
1908	754	640	108	14.5
1909	786	645	135	17.3
1910	629	507	114	18.1
	5,694	5,265	[14]573	10.7

13. Report for 1903, obviously incomplete.
14. No account is made of incompleted examinations or candidates who withdrew.

FROM STATISTICS PUBLISHED IN THE JOUR. A. M. A.*

Year	Examined	Passed	Rejected	Per cent. rejected	Source
1903	†594	559	35	5.9	J. A. M. A., xliii, 516
1904	762	728	34	4.5	J. A. M. A., xliv, 1476
1905	795	759	36	4.5	J. A. M. A., xlvii, 612
1906	817	748	69	8.4	J. A. M. A., xlviii, 1766
1907	632	580	52	8.2	J. A. M. A., l, 1850
1908	742	646	96	12.9	J. A. M. A., lii, 1700
1909	762	645	117	15.4	J. A. M. A., liv, 1742

* Said to include other reports and some corrections which were not published separately.
† Reports of one or two examinations missing.

MANY PHYSICIANS FAIL EXAMINATION

FIFTY-FIVE PER CENT. OF THOSE EXAMINED BY THE STATE BOARD OF HEALTH LAST MONTH FAILED

(From Illinois State Register)

An announcement of the results of the examination of physicians held by the Illinois State Board of Health last month shows that out of the seventy-five physicians who appeared before it, 45 per cent. failed to pass the examination. This percentage of failures is much higher than usual. While the Illinois board rejects a much

greater number than other leading states, the percentage of failures rarely goes over twenty-five, and usually ranges from ten to twenty.

The following is a list of the medical colleges represented in the examination and those who failed to pass:

Chicago: Bennett Medical College passed two, failed three; Chicago College of Medicine and Surgery, passed three, failed three; College of Medicine and Surgery, passed one, failed six; Hahnemann Medical College, passed one; Hering Medical College, failed one; Jenner Medical College, passed two, failed two; Loyola University, passed one, failed two; Northwestern University, passed two; National University, failed two; College of Physicians and Surgeons, passed eight, failed five; Reliance Medical College, passed two, failed two; Rush Medical College, passed two.

Outside of Illinois: Boston University, passed one; Barnes University, St. Louis, failed five; Harvard University, passed one; Indiana University, passed one; Hospital Medical College, Louisville, failed one; Keokuk Medical College, failed one; Louisville Hospital College, failed one; Meharry Medical College, Tennessee, passed one, failed one; College of Physicians and Surgeons, St. Louis, passed one, failed four; Sioux City Medical College, failed one; St. Louis University, failed one; University of Arkansas, failed one; University of Berlin, passed one; University of Buffalo, passed one; University of Maryland, passed one; Washington University, St. Louis, passed one.

A POOR SHOWING

(From the Chicago Tribune)

Last week fifty would-be doctors who had studied in Chicago medical colleges were examined by the Illinois State Board of Health. Twenty-six of them failed to pass the examination. It is safe to assume that of the twenty-four successful candidates some barely got through.

The high percentage of failures is not calculated to give one an exalted idea of the merits of the medical institutions of the state taken as a whole. But for the interposition of the State Board of Health they would among them have inflicted on the community twenty-six manifestly unfit physicians or surgeons. This bad showing calls to mind Dr. Abraham Flexner's sharp criticism of the Chicago medical schools. There were vehement denials of the justice of his comments but we find evidence of their truthfulness in the failure of these schools to turn out a larger percentage of competent men.

It is said that the Illinois State Board of Health rejects a greater number of applicants than other leading states. That may be due to the inferior quality of candidates or to a more rigid examination. We hope it is the latter. It is said also that the percentage of failures this year is much greater than usual. Can it be that the board has taken to heart

the strictures of Dr. Flexner—he criticized it, also—and has adopted higher standards? That would be welcome intelligence. The board could, if it would, raise the standard so high as ultimately to gain for Illinois exemption from that worst of scourges, a multitude of incapable doctors. A bad lawyer may lose a man his suit or a bad banker take his money. A bad doctor may take both his money and his life.

GRAFT IN A GREAT PROFESSION

(From the Chicago Tribune)

In a striking interview in the *Daily News*, a surgeon, who does not permit the use of his name, emphatically endorses recent charges of "graft" in the profession, notably that of Dr. John P. Lord of Omaha, president of the Western Surgical Association, in an address, and Dr. Norman Barnesby in a book which has caused something of a sensation.

It is not a profitable or pleasant task thus to arraign one's own profession. But it is the exercise of a high duty, and one for which we all should be grateful.

And in the opinion of the *Tribune* the situation calls for such drastic treatment. The commercialization of the profession of medicine and surgery has been, we suppose, inevitable, considering the social conditions of American life in the last half century. The old ideal of service, the spirit which sent the typical doctor of the old school into the cabin or the hovel as readily as into the palace, is by no means departed. There are men—and the *Tribune* could name some of them—whose reputation is international, who do more work without pay than with it. There are thousands of doctors and surgeons throughout the country who are giving their lives as generously and unselfishly to the amelioration of human suffering as any of their predecessors. But all the more reason is there that the standard they maintain for one of the noblest of occupations should not be dragged down by the horde of self-seekers and worse. There is no reason why a doctor or surgeon should not exact pay as the lawyer, the soldier, the clergyman, the clerk, the mechanic, or the banker does.

But it would be a tremendous loss to the profession and to our American life if the professional ideal was submerged by an unmitigated commercialism. Yet the charge is worse. It is not only that the money factor has grown. It has become perverted by outright deceit and covert extortion. The source of this evil is not merely apparent in business. There can be no question that the "diploma mill," the unscrupulous turning out on the public of untrained, undisciplined hundreds, is a direct cause. Young men are launched on practice without the necessary general preparation, without the discipline which comes from exacting study in an atmosphere of serious and self-respecting labor, without

proper association or the development of a responsible ethical sense. It is often said by candid lawyers that the ethics of legal practice has been lowered of late years, especially in the service of exigent corporate needs. The remedy in both cases must come in the main from within the profession, but the general social awakening in America will help almost as much.

FEES OF THE ILLINOIS STATE BOARD OF HEALTH

Hon. W. H. Stead, attorney-general, in his biennial report to the governor, makes the following statement concerning boards and commissions. This we believe will be of interest to our readers for several reasons, especially that referring to the creation of new boards and in the part referring to the charges and collection of fees by the different boards. It is a well known fact that the Illinois State Board of Health charges and collects fees for which no accounting is made to the state of moneys collected. It is also common report that a high official of the state apparently tried to secure legislation which would compel an accounting for moneys collected from various sources by the State Board of Health, but was unable to have this bill passed at the last general assembly. In view of the attitude of the attorney-general, another strenuous attempt to pass a bill would seem to be in order. We quote the following:

In the execution of the laws, boards, commissions and administrative departments are essential. Contemplating, however, the great number and variety of boards and commissions which have been created by recent statutes, the advisability or necessity of creating any more is exceedingly doubtful. No reason exists why the powers and duties of existing boards and commissions cannot be enlarged and extended and that, too, with but little additional expense. Furthermore, the advisability of consolidating the different boards and commissions performing related and analogous duties is worthy of serious consideration.

Many of the present boards and commissions are vested with authority to charge and collect fees for the performance of given services, and out of these fees pay salaries and expenses. In some cases no provision is made for an accounting to the State of the moneys collected. The officers of these boards and commissions are public officers of the State, and the fees collected by them constitute a part of the public moneys of the State.

Under the system now prevailing, there is no practical means of ascertaining either the total income of the State and from what sources, or the total expenditures of the State and for what purposes. Every dollar of fees or public moneys collected or received by these various departments, boards and commissions should be covered into the State treasury, through the office of the Auditor of Public Accounts, and no expenditures, either for salaries or any other purposes, should be made by them, except as authorized biennially by appropriation acts of the General Assembly. In this way, and in this way only, can the citizen and taxpayer be informed of the exact financial condition of the State. Furthermore, in my opinion, any other method of transacting the business of these departments, boards and commissions violates both the letter and spirit of our Constitution. In a forthcoming opinion to the Senate, to be rendered in compliance with Senate Resolution Number 9 (Forty-Sixth General Assembly, Special Session), I shall discuss the question at greater length.

MALPRACTICE SUITS IN SANGAMON AND McLEAN COUNTIES

Central Illinois is having an epidemic of suits for surgical malpractice at the present term of the various courts. For the third time a jury has brought in a verdict averse to Dr. E. Mammen, President of the McLean County Medical Society. It is believed by many that such a prejudice exists against physicians in this county, that it will be impossible for the Doctor to win his suit no matter what the evidence might be in his favor. We understand it is the intention of Dr. Mammen to carry this verdict to a higher court with almost a certainty of its being remanded for retrial as in previous cases. It is said that a second suit for malpractice is pending in McLean County, the allegation stating that a hot water bag caused a burn and resulted in keloid.

In Sangamon County the suit of Clifford against Dr. Walter Ryan came to trial, and after a bitter contest the jury stood six to six. Attorneys for the prosecution are reported as being unwilling to undertake another suit.

The case of Hahn against Dr. A. W. Barker of Springfield resulted in a verdict for the defendant. Several other suits, probably five or six in all, are on the docket of the Sangamon County Circuit Court. As a result of these numerous prosecutions medical men are taking hold of accident cases very unwillingly, and many practitioners absolutely refuse to handle fractures and accidents in which there is any likelihood of a suit for damages. The assistance given by the committee of the State Society in several of these cases has been of the utmost value, and much appreciated by those involved.

NOTICE

NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINING AND LICENSING BOARDS

The National Confederation of State Medical Examining and Licensing Boards will hold its twenty-first annual meeting in Chicago, Tuesday, Feb. 28, 1911, at the Congress Hotel.

The subjects to be taken up at this meeting will be a consideration of the state control of medical colleges; a report by a special committee on clinical instruction; a report on a proposed materia medica list by a special committee; the report on a paper presented at the St. Louis meeting by Mr. Abraham Flexner of the Carnegie Foundation for the Advancement of Teaching; and some special papers on such subjects as the regulation of medical colleges, necessity for establishing a rational curriculum for the medical degree, and others, by men eminently qualified to prepare papers on such subjects.

These topics are all of practical and vital interest to medical colleges, medical examining boards, the profession at large and the public. The symposium will be composed of ten papers and be presented from the viewpoints of state, law, *medical colleges, state medical examining and*

licensing boards and the medical profession. The contributors of papers to the symposium on state control of medical colleges are men of the highest attainments in matters pertaining to state, law and the medical profession, and their production will be worthy of the most careful consideration. The chief object of the symposium is to determine, as far as possible, the feasibility of placing medical colleges under state control. The special committee on materia medica made a report at the St. Louis meeting of the confederation June 6, 1910, and it was continued and instructed to report again at the next annual meeting of the confederation in 1911. The report of this committee made at St. Louis has received very favorable comment by many of the editors of medical journals, and should receive at the Chicago meeting extended and careful consideration. The report on Mr. Flexner's paper is published in the Proceedings of the St. Louis meeting of the confederation, page 64, and will be open for discussion at the Chicago meeting.

An earnest and cordial invitation to this meeting is extended to all members of state medical examining and licensing boards, teachers in medical schools, colleges and universities, delegates to the association of American medical colleges, to the Council on Medical Education of the A. M. A., and to all others interested in securing the best results in medical education.

The officers of the confederation are: president, J. C. Guernsey, M.D., 1923 Chestnut Street, Philadelphia; secretary-treasurer, George H. Matson, M.D., State House, Columbus, Ohio.

INDEX FOR THE EIGHTEENTH VOLUME

The index for the last volume, which should have appeared with our December issue, will be found incorporated with this issue of THE JOURNAL. For certain reasons, through no fault of the editors, it seems impossible to prepare a complete index at the proper time without greatly delaying the issuing of THE JOURNAL. This index is supplied by the indexer of the Morgan County Society and is very complete. Our readers will therefore take notice of the appearance of the index at this time, and inform the binders where it may be found.

While speaking of THE JOURNAL, we have a call for the Transactions of the Illinois State Medical Society for the years 1896, 1897, 1898. These volumes for the library of the College of Physicians of Philadelphia. Any of our members knowing where these Transactions may be obtained will please communicate with the Editor's office.

Scientific Editorial

DEVELOPMENT OF RADIOGRAPHY

The wonderful discovery of Professor Roentgen that Crooke's tubes, which had formerly been used as scientific playthings, were capable under certain conditions of developing a light which penetrated the structures of the human body, marked an era in the science of medicine

and surgery. Great things were predicted for the new discovery, but only now after fifteen years is there the full realization of the vast possibilities of radiography. We are also at last learning its dangers and limitations.

The original tubes were about the size and shape of an ostrich egg and were very simple affairs. To-day the perfected tubes used for radiography are marvels of the glass blower's art. The light emanating from them is as the arc light to the candle of the small, primitive tube. The tubes can be rendered hard or soft at will, and a third wire serves to take up the inverse rays.

The first device used for generating the electric fluid was the static machine. Very soon these machines were magnified to contain twenty-four and even thirty plates revolved by electric power at a rapid speed, and generated a light which for the time was wonderful. In a few years a static machine of larger or smaller size lent its imposing presence to the office of nearly every ambitious practitioner in the country. "Mail-order surgical implement houses" manufactured them by the score. The plates, however, were prone to go awry and wabbled on the spindle. Damp weather affected their generating power. Turning the crank was tiresome business when there was no other power to be obtained. Soon the ponderous static machine lost its charm, it became covered with dust and cobwebs and was relegated to the scrap heap. Most of them can be had for the asking.

Next came the coil with the electrolytic or mercury interrupter, and with it a considerable improvement in the possibilities of radiography. Faults were soon discovered in this machine. Among them are (1) a variation in the intensity of the current; (2) difficulty of generating a current of high amperage; (3) slowness of the interruption; (4) formation of secondary rays.

Finally has come the interrupterless machine also known as the Snook type. The construction of this machine is a triumph of technical skill, and the credit belongs to American electrical engineers. One of them, Lemp, as early as 1897 obtained a patent on a primitive type of this machine which contained the essential principles of the Snook generator. Snook obtained his patent of a perfected type late in the year 1908, and has constructed a machine of extraordinary practicability. This consists of (1) a motor generator of two to four kilo-watt capacity, (2) a step-up transformer, and (3) a high-tension commutator. Numbers one and three are mounted on the same shaft, and revolve at the rate of 1,800 to 2,000 times per minute. The high-tension rectifier is, therefore, synchronous with the alternating current furnished by the motor generator to the step-up transformer. Snook places numbers one and three on a stand. A considerable improvement in the construction has been made by placing the generator and the commutator on the floor instead of on a stand. In the improved apparatus the step-up transformer is placed on a stand.

The current delivered to the *x*-ray tube by the Snook-type machine is unidirectional and pulsating and is much less destructive of tubes

than the alternating discharge from an ordinary induction coil. The direct current is best adapted for this machine. Certain operators seem to have had some difficulty with tubes, but as far as our observation goes there has been no difficulty of this kind.

The Snook-type machine of 4 kilo-watt capacity permits the taking of radiograms in the smallest possible time. Whether it is possible to take a picture of the lungs between heart beats, that is in one-seventieth of a second, we are not prepared to say, but that it shortens the time of exposure is very certain. For instance, the hip now can be taken in from two to ten seconds, the thorax in two to three seconds. Such a picture also shows the structures of the bones and tissues much better than the old type of machine, and is less destructive of the tube. The problem of making instantaneous radiograms, that is of one-one-hundredth of a second exposure, if not completely solved is on the eve of solution. In such a radiogram the heart, the diaphragm, the posterior and anterior ribs are shown as if sketched with a lead pencil. The substance of the kidney can be differentiated from the pelvis. Gall-stones can be detected. Another great advance is the stereoscopic picture. The technic of taking stereoscopic radiograms is too complicated to be described in this article. Those who have not seen the latest development of the *x*-ray machine have something marvelous in store for them. The cost of the apparatus is from $1,000 to $1,200, and while the price may seem high it may be a blessing after all if it limits the use of the *x*-ray light to those who make a study of the subject, prepare themselves for making the best radiograms and protect themselves from the rays while working with the machine.

RESOLUTIONS

To the councilors and members of the Chicago Medical Society:—At the next meeting of the council I propose to submit the following preamble and resolutions:

WHEREAS, The present method of electing the councilors of the Illinois State Medical Society is unfair and undemocratic and tends to restrict the control of the Society to the few in direct opposition to the principle of self-government; therefore be it

Resolved, That in the opinion of the Chicago Medical Society provision should be made in the Constitution and By-Laws for the election of a councilor by and for each district of the Illinois State Medical Society; and be it further

Resolved, That the delegates from the Chicago Medical Society to the House of Delegates to the Illinois State Medical Society hereby are instructed to make every effort to bring about such changes in the Constitution and By-Laws of the State Society; and be it further

Resolved, That a copy of this preamble and resolutions be published in the *Bulletin* and be submitted for publication to the *Journal of the American Medical Association* and to the ILLINOIS MEDICAL JOURNAL.

(Signed) HENRY F. LEWIS.

The following resolutions were passed at the December meeting of the Chicago Medical Society:

WHEREAS, Certain charges against and criticisms of the State Board of Health having been set forth in the public press and elsewhere; and

WHEREAS, Dr. James A. Egan, the Secretary of the State Board of Health, having formally requested the Chicago Medical Society to investigate these charges; and

WHEREAS, These charges and criticisms having been made by certain persons apparently actuated by partisan political motives, or by animus based on the fact that they have been disciplined by the State Board for infraction of the laws of the State of Illinois; and

WHEREAS, These charges and criticisms having thus far been unsupported by competent evidence and having been ignored by the proper legal authorities to whom the State Board is responsible for its integrity and the proper conduct of its office; and

WHEREAS, The Chicago Medical Society has no official jurisdiction over the State Board of Health or the members thereof; therefore be it

Resolved, That it is the sense of the Council of the Chicago Medical Society that any official action on its part on the question of the attacks made on the State Board would be undignified and unjustified by the powers of this body as well as an implied reflection on the State Board, which would be unwarranted by any evidence thus far submitted against said board; and be it further

Resolved, That a copy of this preamble and resolutions be published in the *Bulletin* and submitted for publication to the ILLINOIS MEDICAL JOURNAL and to the *Journal of the American Medical Association*, and that the Secretary be instructed to send a copy of this preamble and resolutions to the Secretary of the State Board of Health.

Special Article

THE RELATION OF THE UNIVERSITY OF ILLINOIS TO MEDICAL EDUCATION *

DR. EDMUND J. JAMES
President of the University of Illinois

Gentlemen: When your committee asked me to address the club this evening, I got the impression that I was to talk on the relation of the University of Illinois to medical education. I note that the topic on the printed program is of much wider scope than that, namely, "What Illinois Needs in Medical Education." As there are, however, other speakers who will doubtless discuss other phases of the subject, I feel that I may properly enough limit myself to the topic I had in mind, namely, "The Relation of the University of Illinois to Medical Education."

I take it that this relation is at bottom none other than that which every institution which undertakes the work of medical education at all should have, and none other than that which should be taken by an institution like a state university which is reaching out to answer in a comprehensive way the needs of the commonwealth in the realm of higher

* Abstract of Address before the Physicians' Club of Chicago, Friday evening, Dec. 2, 1910.

education. I may therefore properly enough advance one or two general considerations as a basis for my remarks, before proceeding to their immediate application to the University of Illinois.

I became interested in the subject of medical education a generation ago—to be exact, thirty-five years ago—when a student of public administration in a German university. In studying the function of the state in its relation to the life of its citizens under the tutelage of the great Lorenz von Stein of the University of Vienna, we were compelled to take a broad view of human society and of its relations to the political organization called the state. Stein's lectures on public administration included among other things an extensive survey of the relation of the state to medicine, and I think that even our medical men of to-day would profit by a course of historical study in this department of political science; for an accurate history of the relation of the state and the government to private and public health serves to set forth certain definite facts in such a clear light that the resulting inference as to what is a proper policy in certain matters at any rate, is all-compelling in its force and would bring all men to think alike on certain fundamental aspects of this very important question.

The state, i. e., organized society, is greatly interested in the subject of the health of its citizens individually and collectively; if from no other point of view, simply because good health on the part of the body physical is the basis of any good health in the body politic or body social. The welfare of the community as a whole depends in the last analysis on the condition of the physical health of the individual citizens which make up the community. This fact has been recognized for a long time. The resulting corollary is plain, that if the state can do anything to preserve and improve the state of health on the part of its citizens, it is bound to do it, just as any prudent housekeeper is bound to look after the conditions of the permanency and persistence of the household. Human beings learned early in the history of government that the health of the citizen depended very largely on a sound sanitary policy on the part of the state, though there were differences of opinion as to what this sound sanitary policy might be. It was also perfectly apparent that a sound sanitary policy could not be carried out by the state without exercising at certain points that supreme compelling power which is characteristic of political and state action, controlling and regulating in many ways the external acts of members of the society.

But it also became apparent as time went on that a sound sanitary policy which should call on the state for this all-compelling authority to enforce its provisions, must itself be based on sound knowledge, on accurate information, on a definite theory as to the cause of disease and how disease could be combated. In other words, in the last analysis, if the state is to have a sanitary policy it must know what to do. If all disease is an affliction visited on the human race by the gods in their wrath, and the only way to stop it is to appease in some way the heavenly powers, either by prayers and supplications or by the sacrifice of bulls and goats, it is still necessary that the state should in some way or other

have a theory as to how these prayers and supplications can be best offered and as to how the blood of bulls and goats can be best spilled.

As a result of this the state was compelled to rely on the only source of medical knowledge which it had, namely, the medical profession, whatever that might be, consisting in many places and at many times of the priest, at other places of the "medicine man," in all places of the men who were supposed by their peculiar knowledge or training to be able to give to the government this information on which it could safely act.

The supreme importance of the medical profession in a large sense in the history of human society is apparent to anyone who reads even in a cursory manner the records of human experience. That the state was bound to take up some attitude toward this whole field was also evident; and that the activity growing out of this attitude should increase with our increased knowledge of human science was also apparent; and this has been borne out in the history of medical research and medical education in all countries. As the state advanced, then, as it developed a definite policy in regard to public health, using that term in the larger sense, it came face to face in this whole field with what may be called two aspects of this very necessary development. On the one hand its own need of the results of medical education and research in order to carry out its own definite policy in the field of public health so far as it interfered actively and positively in the regulation of the life of the people or in the promotion of its common interest; and in the second place the necessity of providing so far as it could for the promotion of the health of its individual citizens outside of the realm of government interference, so far as it could be secured by the advance of medical knowledge and the training of suitable men to apply this knowledge in the treatment of disease.

These two objects, of course, were not only parallel but they conditioned each other very largely. The state needed, in order to carry out its sanitary policy, well-trained public servants, and these could not be obtained without accurate, careful and suitable training for this purpose. Moreover, it could not be assured that it was improving and advancing its public administration in the department of health unless it was also pressing forward all the time the bounds of our knowledge, the increase of science in this particular department; and consequently *research* was a fundamental need of government activity, even if limited to the narrowest possible bounds, if it was to be an intelligent and fruitful activity.

Thus the state has come by a double road, first through its own need inside the bounds of its own activity, second in its necessary care for the welfare of the individual members of society, first ever to advance and expand our medical knowledge, second to train in an ever more efficient way the men who either in public or private station should apply this medical knowledge.

Some one has said that medicine more nearly resembles theology than any of the other sciences because, I presume, of the large subjective element in both kinds of knowledge. The effect of a drug may be as different on different people at different times and under different

circumstances as any theological doctrine, and the effect of the same theological doctrine on peoples of different ages and different climes has been, of course, extremely different. There is, therefore, in the organization and management of public health a subjective element which must not be lost sight of in our development and training of the men who are to administer this important department of our social life.

The state, of course, in working out a sanitary code, must depend in the last analysis on the advice of its medical men; but the possibility of working out a sanitary code which will be efficient depends also on an accurate adaptation of such code to the real needs, to the fundamental conditions of the society and the time in which it is to apply. The best scientific code in the world would have little or no value if an ignorant or prejudiced or superstitious community should attempt to enforce it. The prejudices of men are especially strong in this field. Consequently the medical men who are going to be good advisers of the government in its sanitary policy and who are going to help raise the standard and hasten or advance the medical knowledge and medical consciousness, so to speak, in the mass of the community, must be men of large vision, of wide outlook, of great experience. They must be statesmen as well as physicians. This means, therefore, that the *physician should be a man of liberal education*, whether that liberal education is acquired in the school or acquired in the practical experience of life. And unless he has this liberal education, unless the profession *as a whole* has this liberal education, we may expect to see the progress of the community in this department of its life very slow and lagging.

So much, then, for the general considerations, for a bird's-eye view, so to speak, of the conditions of medical advance.

The first opportunity I ever had to come in practical contact with a proposed improvement in medical education was during the thirteen years I spent as professor in the University of Pennsylvania. Twenty-five years ago Dr. William Pepper, provost of the University of Pennsylvania, one of the most farsighted, one of the most truly statesmanlike medical men whom I have ever known, appointed a general university committee to take up the subject of the better integration of the professional schools of the university with the college and technical schools.

I happened to be associated with the sub-committee on the medical school. Harking back to my intercourse with Lorenz von Stein and my study of the history of medical education and research in its relation to the government, and examining the state of things then existing in the different modern countries, I recommended to the sub-committee at that time that the university require for admission to its medical school the completion of the sophomore year in the college of liberal arts, and that a medical course of five years, counting from that time, be inaugurated, the first two of which corresponding to the last two of the college course, should be given to the study of the underlying sciences of medicine: chemistry, physics, biology, anatomy and physiology; that the last year should be given practically to the hospital work, and the two intermediate years to clinical instruction.

I was probably led to this conclusion at that time by my conviction that, on the whole, the Germans had worked out the best scheme of medical instruction which had up to that time been elaborated in a large and systematic way for any great civilized country.

This scheme consisted first in a very thorough, vigorous, intellect-developing secondary school course, extending in theory from the ninth to the eighteenth year of age, extending in practice from the ninth to the nineteenth or twentieth. With this preliminary education the student was permitted to begin his medical study. At that time it was possible for him to complete the entire course in a period of four years. That period has since been extended to five years. But even in that day the desirability of a student's spending a year in hospitals immediately on passing the state examination for the practice of medicine was so generally felt that every aspiring youngster took such a year if it were feasible for him to arrange it.

I remember the defence which I made for this recommendation at that time and I should like simply to repeat the two or three fundamental propositions.

I maintained first of all that the future physician should be an educated and cultured gentleman, able to do his part as a thoughtful citizen of a democracy in the support and development of our social and political institutions.

I maintained that the physicians above all other men, not even excepting the clergymen, if of the right type and inspired by the right ideals, might do more to raise social and ethical standards than the members of any other profession. I emphasized the consideration I have already mentioned, that if we were ever to have a reasonable policy in regard to public health, we must rely for expert advice on the physician, and unless he were an educated man, aside from his profession, unless he had a broad outlook and wide vision he would be an unsafe counselor in all these public matters.

I urged again the same consideration from a little different point of view, namely, that the medical profession as such is the keeper, the protector and the promoter of some of the most important and far-reaching interests of society and that the members of such a profession, if it is to do its duty toward the community and the sacred interests dependent on it, must have the education, the training, the culture necessary to perform efficiently this great social duty.

Hence I insisted that the student before he took up the pursuit of medicine in the university should have acquired at least the degree of liberal education involved in completing a course of secondary training extending from the sixth to the nineteenth or twentieth year of age, i. e. from the beginning of school life until, roughly speaking, the close of the sophomore year in the typical American college.

I felt very strongly at that time that if our secondary school were properly organized, that was an ample period for securing that fundamental, underlying liberal education on the basis of which the super-

structure of sound, scientific and practical professional training could be built.

I insisted in the second place that the future physician should be trained in a thoroughly scientific way until he had reached the point when he might properly have an independent, scientific judgment on the subjects in the study of which he was engaged. There was at that time a considerable difference of opinion, and of course it continues up to the present, as to whether this is a correct view or not. Some people distinguish between the scientifically and the practically educated physician. I cannot for my part concede that there is or ought to be any such distinction. It is true that a man may go on studying chemistry and physics and anatomy and physiology till doomsday and at the end of it all not be an efficient practical physician or a safe public counselor. On the other hand I believe that no thoroughly successful practical profession can be built up except on the basis of the fundamental, scientific training of every individual in it. Now, of course, this does not mean that the young man should spend his time merely acquiring information. No man could in the four or five years of a medical course acquire all the medical information we have, and some of it, of course, wouldn't be worth much. We might safely leave it. But in this period, he certainly ought to acquire such a habit of body and of mind, such a control over himself, such a knowledge of fundamental principles that he would be in a position in every subject which underlies the practice of medicine to have his own judgment; be able to apply his own criteria; be able to test, if you will, the judgment of other men by scientific standards.

This is the specific contribution which the German has made not only to medical education but all other university education, that the university training of a man should result in bringing him forward to a time and place where he may properly undertake to test his own observations, his own inferences, his own knowledge, by scientific standards. Out of the whole group of men who have arrived at this point we should then select by some such rough process as goes on in the competitive world outside those men who, having this fundamental scientific training, have also acquired the practical knowledge which makes them efficient practitioners and the larger view and outlook which makes them safe counselors and advisers in matters of public and private health. On the basis of this scientific training—you will note I do not speak of scientific knowledge, for it seems to me the emphasis is to be placed on the training rather than on the knowledge, on the resulting power that the man has over the material that he has to deal with rather than on the amount of specific knowledge that he may have as to what other men have thought or done, where they have succeeded or where they have failed—on the basis, then, of this thorough scientific training should be reared the superstructure of the practical application of this knowledge, to the treatment of human disease. In this department would naturally come, in my opinion, the study of pathology and, of course, all the clinical work; but whether pathology should be put into the first period or the second is a matter for convenience about which expert men, I under-

stand, have a difference of opinion, and I should not undertake to decide such a question myself.

If the university will set before the community, therefore, and insist on this standard of, first of all, a *liberal* education; secondly, a thoroughly *scientific* training; thirdly, a *practical* training, then it will have done all that it can do toward preparing and sustaining a medical profession for this great work in the community and the state.

It goes without the saying, that for giving or conducting such training, some men must be obtained who give their whole time and life and thought to the work of advancing these sciences and training these young men. And while I presume it is true that no man in certain practical departments could be successful unless he is engaged in the practical work also, I think that the medical professor or medical teacher, at any rate in the underlying sciences, should engage in practical work only so far as it will better qualify him for doing the work of investigation and teaching. It goes without the saying that hospitals and clinics and dispensaries are necessary elements of this trainjng. It also goes without the saying that hospitals organized for the purpose of investigation and teaching are undoubtedly for certain purposes far better in this scheme of medical training than hospitals which do not contemplate as a serious part of their work either of these ends.

All this was the result of my study and investigation twenty-five years ago. I have seen no reason to change my views essentially on these points since that time. I have been greatly pleased with every passing year to see some approximation toward this ideal. I believe that in the lifetime of some of you sitting here, our universities will come practically to the standard which I have suggested. In the meantime, however, we are a long way from that point. We have, it is true, made some substantial advance. The university of Chicago in organizing its medical work required for admission to its strictly medical subjects the completion of the first two years in college, allowing, however, the fundamental preparatory subjects for medicine to be taken in these two years, physics, chemistry, biology. The University of Michigan, the University of Wisconsin, the University of Minnesota have followed this example. The University of Indiana has given notice that it proposes to do the same. Northwestern University is on the road to making the same requirements, and a great many of the schools, which from the standpoint of their function as centers of investigation or as centers of training medical practitioners, are less important, have also announced that they intend to follow the same plan. This is a great step forward. I believe that in a comparatively few years it will be accepted by the American public, at least north of Mason and Dixon's line, as the typical American standard.

I am inclined to think that when our elementary and secondary schools are better organized, it will be perfectly possible for a boy to enter school at six years of age, enter the high school at twelve, enter college at sixteen, and graduate from college at twenty, with the preliminary subjects, physics, chemistry, biology, etc., out of the way.

In the meantime the average age of students entering the University is nineteen. By the time he has finished the sophomore year he is twenty-one. I think myself that at the age of twenty or twenty-one the student should be fully equipped to enter on the study of medicine. In fact I should think it would be a mistake, speaking of the average man and the large number, for him to defer to a later period the beginning of his medical studies. Of course there will always be a few men who will spend more time in the college, who will spend more time in the medical school, who will spend more time in graduate work in the hospitals, but I am talking here of the typical man. I am talking here of a standard which we may apply to all men in the long run and which ultimately the state itself may set up as the minimum standard for the practice of medicine. This is the standard to which the American Medical Association is pledged: to which the Association of Medical Colleges is traveling. It is in essence the standard of England, of France, of Germany and other civilized countries.

I see my time is slipping away and I cannot go farther into these details without encroaching on the time of the others. I take it that we are all agreed on these things which I have set forth. We, however, do not make the community. We are not the people who make the laws except within very narrow limits. We are only a part of the people, and we can persuade the people to accept these higher standards only in proportion as they themselves rise to higher standards of intelligence and insight and outsight, and as we ourselves are able to point to actual results which will commend themselves to public conscience and the public intelligence.

The University of Illinois undertook some thirteen years ago an experiment in medical education. It made a contract with the College of Physicians and Surgeons, a proprietary school in the city of Chicago, by which medical education should be carried on under the auspices of the University by the medical faculty which was self-constituting and self-controlling, subject to a veto on the part of the board of trustees of the University, though this veto itself was naturally confined within very narrow limits as a working practice.

The University has never spent a single dollar on the medical school or on medical education. The expenses of the school have been paid entirely from the proceeds of students' fees or the contributions of the professors. The men who control the College of Physicians and Surgeons borrowed money for the purpose of erecting and equipping the necessary buildings and laboratories. This money is to a considerable extent a charge on the property at the present time. But a portion of the original indebtedness has been paid off.

Owing to certain clauses in the contract it was difficult for either the university or the College of Physicians and Surgeons to take a very aggressive attitude in advancing standards; but of course the real difficulty was that neither institution had any money to put into the enterprise. The whole experiment was dependent absolutely on the income from student fees.

With this limitation kept in mind I believe that the university and the College of Physicians and Surgeons may very properly be proud of the results which have been achieved. The real difficulty, it must be repeated, in the way of advancing standards was not good will to do it, but that neither institution had any resources or funds to put into the work beyond that derived from students' fees.

The experience of the last fifteen years has demonstrated beyond a doubt that a modern medical school cannot be established and maintained on any such basis, and the time has come, therefore, in the opinion of the University and of the College of Physicians and Surgeons, when a change was absolutely imperative. With the consent, indeed, one may say, upon the initiation of the College of Physicians and Surgeons, the contract made ten years ago has been absolutely abolished and the medical school has passed as completely into the control of the board of trustees of the University of Illinois as is the school of engineering or the school of agriculture.

The University has leased from the College of Physicians and Surgeons their property on the west side as a plant for the use of its medical school. This lease runs for one year and may be renewed on the same terms for two two-year periods. The University pays the College of Physicians and Surgeons a rental for the use of this property which is based, roughly speaking, on the necessity of meeting the interest charges involved in mortgage and bonds secured by the property, and taxes, insurance, etc., and certain floating and now due indebtedness.

The trustees of the University have the right to purchase the property at an arbitrated value in case the legislature authorizes them to do so, and makes a grant of money for that purpose. In case the University purchases the property the sum paid on the basis of the arbitrated value is to be reduced by the amount of money which the University may have spent on permanent improvements.

The trustees of the University of Illinois have decided to ask the legislature of Illinois for the sum of one hundred thousand dollars per annum for the equipment, maintenance and extension of its school of medicine.

I have been asked by many men what the University proposes to do with this money. He would be a bold man who would say in advance in detail what any board of trustees will do with a legislative appropriation which has not yet been made. No one can know in advance what restrictions the legislature may place on the appropriation.

Moreover I have not been authorized by the board of trustees to speak for them. In fact they have taken no action on this particular proposition. They never did in regard to any other appropriations. In asking for an appropriation for a law school, they did not propose to do anything else than to use their best judgment in promoting the progress of legal education and extending the proper facilities to the young people of this state. In asking for an appropriation for the engineering college they have not sketched out in detail what they proposed to do. That the

law leaves to them, and the legislature has thus far been willing also to leave it to them.

The only thing that one can say is that the trustees, if they get this money, will use it to develop the best medical school they can with these resources. What particular things they will do must be decided by them when the money is at their disposal.

With this distinct understanding, then, that I am not in any sense pledging the trustees of the University of Illinois—a thing which I cannot do—I may indulge in a little prophecy based on a study of the situation, the inherent necessities of the case, and what would probably be done if this money were given to the trustees for this purpose.

I should guess that they would organize a strong force of professional teachers to handle the scientific subjects in the school course such as anatomy, physiology, physiological chemistry, pathology, etc. I should guess that they would bring to the city of Chicago or find them here, a group of men whose cooperation in this work would raise perceptibly the level of scientific work in the field of medicine in the city of Chicago.

I should guess that just as rapidly as they could lead public sentiment they would establish the standard which has been accepted already by Chicago and Michigan and Wisconsin and Minnesota, and if possible advance it somewhat. I should guess that they would get the best advice they could in and out of their own school; in and out of this city; in and out of this country, as to the best things to do in their field and would then do them to the extent of their ability.

Prophesying again, without promising either for myself or anybody else to do anything in particular, I should guess that they would pave the way for such a cooperation among the great medical institutions of the city of Chicago in the work of medical research and medical instruction as would help to introduce a new era in this greatly debated department of our sanitary, social and political life.

In a word, I should guess that the outcome of this appropriation would be the beginning of new things in medical education, not only in the University of Illinois but in the city of Chicago, the state of Illinois and indeed the whole Mississippi Valley.

Friends, we are to-day confronting a situation and not a theory. I believe that it is fundamental to any possible organization of medical education in this city or this state, that the state of Illinois as a unit, the great commonwealth, should get behind this great cause. That the state should be supporting medical research and training just as completely and fully as it is supporting agricultural research and training or engineering research and training or legal research and training. I believe that if we all pull together and get the state to take this initial step we shall have made the most important advance in this subject which has been thus far registered. And I am so deeply convinced of this fact that for my part I am willing to sacrifice some other things in which I am greatly interested, or at least to postpone adequate provision for the same, in order to make this great step in advance.

If the commonwealth of Illinois will begin the policy of supporting medical research and medical training through the University of Illinois, I believe we shall have made another great step forward toward the time when the city of Chicago will be a recognized center of medical research, medical training and medical skill second to none in this country or indeed in the world.

PHYSICIANS' CLUB OF CHICAGO

A meeting of this club was held Dec. 2, 1910, with Dr. James B. Herrick in the chair.

MEDICAL EDUCATION IN ILLINOIS

The chairman said: Members of the Physicians' Club: To the casual observer the problems of medical education permit of easy solution. As soon as he himself has obtained his diploma he begins to speak of raising the requirements for entrance. "Let us have," he says, "a thorough course of four years—yes, make it five—in the theoretical branches, and in the practical branches, including actual hospital and clinical work. Let the young graduate be subjected to a rigid state board examination. Let us raise the standard all along the line." This, you will notice, after he himself has obtained his own diploma. The solution, to judge from his glib talk, he regards as easy and simple. To the more critical student, however, of medical education, the problem is not so easy. It is important to note that it touches other problems, problems of liberal education, agricultural and technological education; problems of economics, social problems; the relation which the physician bears to the community and to the state, etc. The question is seen, therefore, to be one that is intimately and intricately connected with other problems.

Some of the details that must be considered may be briefly enumerated. How high a standard shall be required for admission? A high school diploma or two years of college work or a bachelor's degree? Will a high school diploma enable the student to be efficiently prepared to undertake the study of medicine? If a bachelor's degree be required, will not the medical student be robbed of some of the best, the most plastic, the most receptive years of his life? If this should mean that a man cannot be a bread-winner until he is twenty-eight or thirty years of age, is it right to the individual, is it really justice to him? After he has once entered a medical school, what shall he be forced to study? How much emphasis shall be laid upon teaching important facts, that is, knowledge that is already known. How much emphasis is to be laid upon methods? What is the proper place in the medical curriculum for pure investigation or for research? How shall the teaching be done? What is the function of the didactic lecture, the large clinic, the recitation, the small clinic? What about the preceptorial method as applied to medical education? To what extent and how shall undergraduates be encouraged in the way of research, in productive, investigative work—how shall they be prepared to do it? How can they be taught to use the library? What supervision should the state have over undergraduate instruction and over the graduate when he has finished his medical course? As to the teachers themselves, who shall they be? Shall they devote all their time to teaching—the practical man as well as the so-called theoretical man—or shall they have the right, as most now have, to engage to a limited extent in general or special practice? How shall the student obtain the work that he needs in laboratories, laboratories of chemistry, pathology, bacteriology, and so forth? How shall he obtain the laboratory work in medicine and surgery—that is, actual contact with the sick patient? How shall we best utilize the hospitals that are already in existence, which were not founded primarily for purposes of instruc-

tion? How can hospitals that are educational in their inception be obtained; how shall they be organized and managed, and where shall the money for all of this come from? What, after all, is the object of educating a physician? Is it primarily to train him so that he may earn his livelihood, so that he shall be a bread winner, and shall have an occupation or a trade, or is it to train him for a profession? Or is it perhaps, to train him to be an investigator along the lines of pure science?

These are a few of the problems, and there are many others, that confront the one who sits down and carefully and conscientiously studies this question of medical education; and the solution is not easy. To many of these problems you and I have the answer. To many of them our answer is given with definiteness and positively. To others we see two sides.

Now, all these questions, with their ideal aspects must be adapted in their application to practical existing circumstances. If we may believe the report of the Carnegie Foundation, the so-called Flexner report, the existing circumstances here in Illinois are not very creditable. By Illinois we mean with respect to medical education, Chicago, and so the question that is up for discussion is the subject of medical education in Chicago. If Mr. Flexner is right—and I have no hesitation in saying personally I believe that his investigation was impartial and just, and that while we may differ from him here and there, his conclusions are in the main sane and judicial—if, I say, Mr. Flexner is right, we have here in Chicago a most heterogeneous mass of medical schools. Our medical conditions are, I think I am using his words, such that Chicago is a plague-spot in medicine. If we mark the schools, as markings are now made largely, not in medical schools alone, but in colleges and high schools, A, B, C, D, E, and so forth, he finds here only three or four schools that can be called up to the grade of C, "fair," or B, "good." By a little stretch he might possibly mark one or two A minus not "excellent," but "pretty good." The others, some dozen or more, he would mark D, "poor," or E, "failures." How can we better this condition? How can the schools marked B or C be pushed up to the mark A? How can those schools marked D be pushed up at least to C, and how can those of the mark E be blotted out altogether as absolute failures? Is it wise that we should have so many medical schools in Chicago? All these questions are live questions.

We are fortunate in having with us to discuss this question the presidents of two of the leading universities with which these medical schools are more or less intimately associated and the personal representative of the president of the third. The first speaker who is to address you is the president of the University of Illinois, one who ought to know what has been going on in all three of these medical schools because if I remember rightly, he has been on the inside of things in the University of Chicago; he ran or tried to run the Northwestern University at one time (laughter), and he is now running or is trying to run the University of Illinois. He ought to know about the conditions in all three of these medical schools, and so I will call upon President James, truthful James. (Applause.)

GENERAL DISCUSSION

DR. ARTHUR DEAN BEVAN: Mr. Chairman, and gentlemen: I shall attempt to say what I have to say in a very brief way as the hour is getting late.

I have been asked to open the discussion on these two papers on the subject of what Illinois needs in medical education, and how Illinois can obtain higher standards of medical education? Before we answer either of these questions let us see what medical education means to-day, not only in Illinois, but in the United States and in the world. Medicine of to-day is a different proposition from what it was twenty years ago, or at the time when I and a great many of you graduated: At that time it was rather a mass of empirical facts, with often very little scientific basis. To-day medicine is a science. It is just as much a science as is chemistry; it is just as much a science as any of the sciences taught in a university, and it has developed into a great mass of useful knowledge.

It demands, to-day, a thorough training in order to convert a student into a competent practitioner, or into a competent medical teacher, or into a competent research man. That training as a minimum means a thorough high school training; in addition a thorough laboratory training in the premedical branches of chemistry, physics and biology; a thorough training in the medical school, in laboratory work, in anatomy and physiology and pharmacology and pathology; a thorough training in the clinical branches of medicine, obstetrics, surgery and all the specialties. It means further not only a thorough training in a medical school, but as an absolute necessity, the training that a man can acquire only as an interne in a hospital for at least one year working in the hospital as a part of the hospital machinery. This practical year should be made an integral and compulsory part of a medical course.

Now, how much of this conception of medicine and these requirements of teaching medicine is accepted by the world? Practically this is the conception in Germany to-day, in Austria and in England, and it is the conception in most of our better schools. Here, in this country, we have 130 medical colleges. A few years ago we had 166. Of these 130 medical colleges, this year thirty-eight already require of their students this preliminary training in the pre-medical sciences, in addition to a four year high school course, and most of the students in these thirty-eight medical schools will obtain, in addition to their four year medical training, a year's experience in a hospital. I should like to see the hospital year made compulsory by every medical school and by every state licensing board. This is a general conception of what medicine is to-day and what a medical education means. Let us turn to the State of Illinois. A clear idea of what Illinois needs in medical education is best presented by showing the present situation in this state. What I am going to read to you is largely taken from the data of the Council on Medical Education of the American Medical Association, compiled by our Secretary, Dr. Colwell and myself. It is practically official. All the medical schools in Illinois are located in Chicago, and this state has more medical schools than any other state or country in the world. There are now sixteen institutions in Chicago which turn out graduates who bear the title of doctor. Of these sixteen colleges, there are five which turn out doctors who legally, at least, are admitted to practice medicine in but a limited way:

1. The Littlejohn (Osteopathic) College.
2. The American College of Mechano-Therapy.
3. The McCormick Neurological College.
4. The Oakley-Smith College of Nahprapathy.
5. National School of Chiropractic and Physiological Adjustment.

They are permitted to diagnose, if they can, and to treat any cases which come to them, but they are not supposed to do surgery or to prescribe or administer drugs. Furthermore, they are not entitled to call or advertise themselves as physicians or doctors.

There still remain eleven schools which turn out doctors of medicine, who on passing their state license examinations are permitted to practice medicine in any or all of its branches. Of these eleven medical schools only six were included among the colleges in Class A and B by the Council on Medical Education which for nearly six years has been conducting an extensive study of medical education in the United States. Only three of these were accepted by the Carnegie Foundation report. There are, therefore, on this lenient marking five medical schools in Chicago which the Council on Medical Education were compelled to place in Class C, which means that these colleges were so poor that it would require a complete reorganization to make them acceptable. The report of the Council on Medical Education published in the *Jour. A. M. A.* shows that these colleges are: The National Medical University, which is at present not recognized by the Illinois State Board, Jenner Medical College, College of Medicine and Surgery (Physio-Medical), and Hering Medical College. In the list of class A and B colleges we have the following: Rush Medical College (University of Chicago), Northwestern University Medical School, Hahnemann Medical College, and the

College of Physicians and Surgeons (University of Illinois), and Valparaiso University, and Loyola University Medical Schools. These colleges in both the A and B lists of the official report of the Council on Medical Education of the American Medical Association might properly be recognized by the state board. The five medical schools which are not acceptable are deficient in most or all of the following: their preliminary requirements do not meet the standard of the medical practice act; their medical course is not strictly graded; the number of expert teachers is too limited or entirely wanting; adequate laboratory facilities are lacking or not used; important laboratory branches are not taught; dispensary and hospital clinical facilities are seriously deficient, absent or not used, or the school is to a large extent a commercial enterprise conducted for what profit or prestige there may be in it for its professors, or is kept alive by the employment of misleading advertisements or by methods inconsistent with the maintenance of fair educational standards.

In a number of other states in this country reasonably high standards of medical education have been adopted, the standards are strictly adhered to, and a number of the low-grade worthless colleges have been closed. In many other states there has been a marked progress in obtaining better educational standards and better methods of regulating medical licensure. What Illinois needs in medical education are fewer and better medical colleges; a more strict enforcement of the present requirements; *i. e.*, a four-year high school education as a minimum standard for admission to medical colleges, and later a year of college work should be added to the preliminary requirements, including physics, chemistry and biology. As an additional safeguard, a thorough and practical examination should be required of every candidate for license. With these changes, the other problems concerning laboratory, dispensary and hospital facilities, would more rapidly approach solution. Illinois should not lag behind, but should be a leader in upholding right standards of medical education.

Now, Mr. Chairman, all this is not so much an indictment of the state board, which is shown by existing conditions to be inefficient, as it is an indictment against the entire educational system of our state which makes such conditions possible; an indictment of the medical profession of the state and of the people of the state for permitting the continuance of such conditions. The solution of this problem is simple. The great universities of the State must assume the full responsibility of the medical schools, and provide the necessary endowment, the necessary plant and the men to carry on medical investigation and medical education along the best lines; secondly, we must have a state board which will protect the citizens of the state against the ignorant and the charlatan by demanding thorough training of our medical practitioners and by wiping out the diploma mills. We need a university medical education to provide educated medical men for the State of Illinois, and we should demand the protection by an efficient state board against the worthless commercial medical college and the diploma mills. Gentlemen, this can be done by cooperation; this can be done by the cooperation of the great universities of the state, with the medical profession of this state, and with the people of the state educated by the public press to the necessities of the situation.

MR. ARTHUR HERBERT WILDE (Northwestern University, representing President Harris): Northwestern University takes pride in its medical school. It was the first to establish a three-year systematic course of instruction; it was the first to establish a four-year course, and it did this at great sacrifices. We all stand for higher medical education, and you all know just as well as I do that this involves several things. First, it involves better prepared students. Northwestern University will require in the Fall of the coming year (1911) a two-year college course as a preparation for the medical course. Furthermore, if Dr. Harris had been here to-night he would have laid emphasis on this—that this college preparation should be a real liberal arts education, and not simply elementary courses in chemistry and biology, to be followed by advanced courses in chemistry and biology in the second year, but this preparation should include

modern languages, mathematics, history, English, and other liberal studies. These two years of college work will better prepare the student for his life work. Some of our best physicians have not pursued such a preparatory course, but only a high school course. I might say parenthetically that Dean Wigmore of our Law School made an interesting study a short time ago to find out what were really the superior advantages to be found in the progress of those lawyers who had had a full college course, before they took up the study of law, as compared with those lawyers who had not received a college course preliminary to taking up the study of law, and the advantages were not so great on the side of the college man as had been assumed. Nevertheless, I think you will agree with me that the greater and fuller the preparation, the better the men are likely to be.

Besides the well-prepared student, we must have well-prepared teachers. We must have medical teachers, medical research men of better theoretical preparation for giving instruction in our medical schools than most of the teachers have been able to acquire. We want more of the German patience and spirit of investigation. We must have complete laboratory facilities such as few schools possess at the present time. We must have enthusiasm for the work. I believe we shall never prepare students and teachers and good laboratory men without a real enthusiasm for higher medical education. Every school, it seems to me, ought to have in the coming days such laboratory equipment as the University of Chicago provides for Rush Medical College. It ought to have such endowment as Northwestern University has just received from Mr. Patten, who has given two hundred thousand dollars for the purpose of advancing medical research, a gift which marks an epoch in the history of our medical school. And every medical school should have also such enthusiasm as has been infused into the medical school of the University of Illinois by the present head of the State University, Dr. James. (Applause.) These must be the possessions of every medical school of eminence hereafter. Not all of these things, perhaps not one of them, will be secured without sacrifices. It cost Northwestern University in cold cash when it required only one year of college education as preliminary to the study of medicine, twenty-five thousand dollars a year. When we come to the basis of a second year in college, it is going to cost much more, and we do not know how much. Every one of the schools must have endowments. We have passed the time when the fees of students will pay for the cost of education. The state must supply it or well-intentioned men must make gifts for medical education. The colleges of liberal arts have demanded most sacrifices from the public; in the future medical colleges should call also for large sacrifices on the part of the public. Medical schools are going to furnish a more expensive education, and this expense must be provided for by resources outside of the fees of students. The medical school of Northwestern University, like the law school and the school of pharmacy, will be a cost to the university, and no longer an income to the university.

You may be interested in the attitude taken by Northwestern University regarding the proposition made by the state university. President Harris laid before the Board of Trustees within the last ten days a proposition which President James outlined in a letter before that time, and the trustees practically unanimously took this stand,—that the citizens of the state could not do less than support any proposition that came from the state university or from any other substantial source, which looked toward higher education of the people, whether in medicine, law, or anything else; that as good citizens they must support any such movement.

Northwestern University and other institutions have disabused themselves of the notion that the remarkable progress the state university has made in the last five years is going to kill off the other universities. Not so. The belief is that hearty cooperation and association of these institutions will be of advantage to all. All will profit by the strength of any one of them. To the request to be made by the state university of the legislature for an appropriation of one hundred thousand dollars, Northwestern would say that it is too small. If the state

university takes up medical education in a thorough-going manner, it ought to ask for a much larger gift. "One hundred thousand dollars is a modest beginning," President James says. But these are too modest beginnings for such a work as this. The state University should ask for more, and Northwestern will support a larger request more loyally and more insistently than it will a smaller request. Northwestern University will look with great interest on any progress the state university may make in the extension of medical education.

To express an opinion of my own—and I am not speaking *ex cathedra*—the state university in its work of expansion in medical education might include two things: it might provide lecturers to go from place to place and give courses in preventive medicine, or in first aid to the injured, or in preliminary care that should be known in every household before the doctor comes. The public should be better informed on matters of fundamental hygiene and sanitation. Public sanitation and domestic sanitation should be taught the people as freely as they are taught agriculture. The City of Chicago should have an institution like the Pasteur Institute or the Rockefeller Institute of research, something as great as either. The resources for the establishment of such an institution in this state are as great as can be found anywhere in the world. (Applause.) The faculties and trustees of Northwestern University would welcome and appreciate as much as any one a college or institute of medical research and would cheerfully recognize that no one is better qualified to direct it than the president of the state university. We have no jealousy in such a matter, but simply a hearty interest with you in the progress of medical study and medical research, for we are here for the common purpose of enlightenment of the state, and we want to serve our day and generation in our way just as faithfully as we hope the other institutions will serve it in their way. (Applause.)

DR. HARRY PRATT JUDSON, President of the University of Chicago: I have been greatly interested in these papers and discussions. I have been impressed by the fact pointed out several times to-night that this question of medical education has no earthly relation to anybody who is present. You have all received your education, and if your medical school was a good one it benefited you. If it was a bad one, then your innate genius carried you through, and you have made of yourselves good physicians. The question we are discussing this evening, then, bears on what is coming. We must keep in mind in the training of young men for medicine for the future days, that we have made a tremendous advance in science in the last few decades—that never in the history of the world has science been moving so rapidly as in these days in which we are living—so that a young man who is to be a physician in the days to come must have a sound training in this rapidly advancing and broadening and deepening science of medicine. It is no longer a mass of empirical facts, as has been said by Dr. Bevan, but a new scientific medicine that has been wrought out in place of the superstitions on which some of us were brought up. Any one, therefore, who keeps in touch with scientific thought will see the necessity of a high medical education. Out of the medical training which will make the physician of to-morrow I fancy there will come three things. First, there will be a considerable number of young men who are to become simple, plain, straightforward, ordinary practitioners. They will not be men of genius. They will pick up a living in some way, and most of their patients while they are practicing on them will probably get well. But there is a large field for the plain, ordinary, family doctor. In the second place, there will be a smaller number who will be extremely expert practitioners, men of genius, and they will be much more than medical practitioners. They will be some of the foremost men in all our communities. In these days, when a physician can be chief of staff of the United States Army, our doctors can do almost anything if they only have brains enough, as I know many of them have. We know very well that a highly trained expert medical man is much more than a mere practitioner. He is one of the leading factors of the age in directing the currents of social life. He knows what is going on and how to lend a hand in the right place in the development of our modern progressive society, and there will

be, therefore, from the highly trained physicians of the future those who will be leaders of social development. There will be, I fancy, a still smaller number of men whose genius lies along the lines of scientific medical research. Of course, physicians in general will do more or less of that, but there will be some few who are so trained and who are so expert and whose enthusiasm is so great, that they will devote themselves, heart and soul, to this one fascinating, fruitful line of medical development. We need such men. They are heroes. Dr. Ricketts gave up his life in the pursuit of research work, and when such men devote their lives to a noble cause, in the years to come the advance of medical science will lie largely in their hands. These things will come from any kind of medical training. Now, I do not believe that in all the conditions of our modern life and modern education the amount of training to be given young men in these lines can be adequate with less than two years as a foundation, and that I believe to be the minimum to-day in the minds of the best men who are connected with our medical schools, and I say minimum with emphasis. President James told us what they are aiming at, and what he twenty-five years ago saw. It is coming to-day, and the time at which to begin to put this requirement into effect, I should say, is the second day of December, 1910. (Applause.) The only reason why it should not be is simply because you can get more students without it. But they are not worth while. It is more important that medical schools should have a small number of properly prepared students than a large number of ill-trained students. The men who take more time in preparation will, in twenty years to come, be the men of standing in the community. Therefore, I believe that Chicago is to be, I hope early, a great center of advanced medical education in this country.

REV. H. S. SPALDING (Loyola University): I have listened to the papers and to the discussions with much interest. I am glad we have been given recognition as the fourth medical college in the list mentioned. I listened with respect and interest to the President of our state university, Dr. James, and what he said with reference to high ideals, I can endorse. Our new university of Loyola is not an isolated institution. If it were, it could not cope with the older and better equipped institutions in the state; but it is part of an educational system that conducts thirty-two colleges in this country, with about fifteen thousand students, and throughout the world with seventy-five thousand students; this system of Jesuit education has been tested for three hundred years, and I think that Loyola as a part of it has elements of endurance.

With regard to raising the standard of education, we certainly believe in it. We certainly agree that when it comes to higher ideals we look upon Germany as the great country that fits in perfectly with our system of education, and any standard that reaches towards that will meet with our approval.

There has been reference made to Dr. Egan and his work. I am not in politics, but I believe Dr. Egan has done his duty and he has not cringed before anybody, big school or small, and if you, gentlemen, want the standard raised, raise it by law to two years, and Dr. Egan will enforce it. But if you have got only a high school standard by law, you cannot expect him to go further. I believe that he has been honest with the smaller schools. He has never done anything but justice. He has been honest to us and honest to you all.

Now, gentlemen, I claim we have as high ideals as the three larger medical schools in this state, and I want to say to you solemnly, that if you are going to raise the standard of education in Chicago, you must do it by cooperation. We are willing to cooperate with you. We are willing to meet the standard, but you must not think we are going to sit idly by and let Mr. Flexner, or Mr. Carnegie, or anybody else crush us out of business for the sake of the three schools that may surpass us in numbers. I want to say for Loyola University, that we have as high ideals as any of you, and we are willing to work with you and for you; but we ask you to work with us in conducting the schools, and in the enforcement of preliminary standards or degrees. We will stand by you, work with you, and all we ask is that you work with us and do not work against us.

MR. W. TUDOR APMADOC (Member of the Legislature of Illinois): I feel that this demand for a higher education is serious and ennobling. President James has succeeded in getting more money out of the legislature than any man who came to Springfield, and for a good and worthy purpose. The King of the Corn Market (Mr. Patten) gave two hundred thousand dollars to the Northwestern University for higher medical education, and I propose that the State of Illinois, which yields a larger corn crop than any other state, should at least give that much for this worthy purpose. (Applause.)

MR. WALTER CLYDE JONES (State Senator): I have been much interested in listening to the discussion this evening. I know very little about medicine, but I am in favor of improving the conditions in all professions. This same battle for higher education has been waged in the legal profession with which I am connected, and some substantial strides have been made in that direction. I should say, however, that publicity with respect to your proposed reforms should not be confined to the physicians. You may have addresses delivered here, and they may meet with your approval, as they have this evening, but if you stop there you will fail in your object.

The first speaker, who preceded me, has stated that lobbyists are a very important part of legislation. In my brief experience in the Legislature I have been surprised to find how important it is that the advocates of legislation and the opponents of legislation should appear personally in Springfield. Every week the trains from Chicago are filled not only with members of the Legislature, but with men from Chicago representing various movements and institutions, who are for or against legislation that is pending in Springfield. I might cite an instance which would come close to the gentlemen gathered at this banquet board. There was a bill presented at the last session relating to the osteopaths, and the osteopathic associations sent down an effective lobby, and they were able to pass this bill through one of the Houses of the Legislature. The members of this association and its allied associations were perhaps asleep, but they were awakened to the necessity of action, and they sent their lobbyists down and were able to prevent the ultimate passage of that bill. I simply cite that instance to make this point, that if this body, and the other medical associations affiliated with you, are in favor of any definite program in the way of legislation which you wish passed through the Legislature, it is important, not only that your own membership, but that you individually, should take steps to educate public opinion so that the people will support you. You should send men down to the Legislature to appear before the committees of that body to educate them as to your views, because there are some fifteen hundred or two thousand bills presented to the Legislature at each session, and it is impossible for any member of the Legislature to grasp the features of these bills unless the men who are specialists in the particular subject-matter appear before the committees.

Dr. James has been referred to. He comes over to Springfield every session with his professors and his committees, and they present their requests, and they back up their requests with figures and with facts, and they get substantially what they are entitled to. We are always regretful that we are unable to give the University of Chicago all that it asks; that we are unable to give the State Charitable Institutions, of which Dr. Billings has been the head, all they have asked; but you must understand that we are limited in the amount of appropriations which we can make. At the last session the requests for appropriations were something like thirty-two millions of dollars, while we had only about sixteen millions of dollars to appropriate, so you can see there had to be substantial cuts all along the line.

A few years ago a request was made of the Legislature to appropriate some three hundred thousand dollars to the State University to take over the buildings of The Physicians' and Surgeons' Medical College in Chicago. Many were convinced, in view of the arguments presented, that this should be done, if it were possible to do so, but it was found impractical to appropriate three hundred thousand dollars for that purpose without taking money that was necessary for caring

for the insane and other dependents of the state, and for the running expenses of the university and other educational institutions. You must realize, therefore, that members of the Legislature have a difficult problem presented to them, and they appropriate money oftentimes for those institutions which are most insistent —which make the strongest and the most logical appeals—so that my parting word to you would be that if you at heart believe in this movement which you are discussing to-night, you should at the proper time appoint committees—the ablest and most efficient of your membership—to take the train to Springfield, to sacrifice something of their professional work, and go down to Springfield and appear before these committees and enlighten them in regard to the ideas which you believe should be enacted into law. I believe you will find receptive members of the Legislature there who will heed your suggestions if they be based upon fact and justice.

DR. GEO. W. WEBSTER: I want to refer only to one point in regard to the establishment and maintenance of higher standards of medical education in the State of Illinois, and particularly higher entrance requirements, and I wish to say that the stumbling-block that has been placed in the way of the State Board of Health to prevent the establishment of such standards is placed there by the medical profession of this state through its legislative committees of the state medical societies. By that I mean this: I few years ago I proposed—and I think I was one of the early ones to propose—that the entrance requirements should be two years of college work in addition to the high school course. I proposed this standard in a paper read before the National Confederation of State Medical Examining and Licensing Boards, and it was adopted. I had a conference at the same time with the Council on Education of the American Medical Association in Boston, and told them what the National Confederation propose to do. It was generally understood, and it was, I believe, the policy of the State Board of Health, that this two-year requirement was to be demanded as soon as the conditions would warrant it. In order to prevent the State Board of Health from establishing any such standard, the Legislature of the State of Illinois, at the instance of the legislative committees of the state medical societies at the meeting of the General Assembly, in 1907, took out of the hands of the State Board of Health the power and authority to establish entrance requirements to medical schools. That power is no longer in the hands of the State Board of Health, and the State Board of Health does not establish the standards of entrance requirements to medical schools. That standard was established by the people of the State of Illinois through their chosen representatives in the meeting of the Legislature in 1907, and was made a high school certificate. The State Board of Health has no authority or power to raise that standard in any way whatsoever. Now, if you want to raise the standard to two years work in college as an entrance requirement, something in which I heartily believe, then the first step in doing it is to repeal that part of the medical practice act which makes a high school diploma or a high school certificate the highest entrance requirement, and either leave it in the hands of the State Board of Health to make the standard what it should be, two years of college work, or else through your chosen representatives in the Legislature make the standard such a standard as you demand. But it cannot be done by the State Board of Health under the present law. We have no authority to do so, and if you want a legal standard it must be done in that way. I merely make this statement in explanation, as it does not seem to be generally understood here to-night that this standard cannot be required or adopted or enforced by the State Board of Health without a change in the present law.

DR. JAMES A. EGAN: The State Board of Health has been condemned to-night for conditions said to exist in certain medical colleges in Chicago, but nothing has been said as to the law under which the State Board of Health operates, or the powers and limitations of the Board under this law, except, briefly, in the remarks made by Dr. Webster. These powers and limitations might be considered

with profit by all present. I am not allowed time to fully discuss the law and its mode of administration.

Just a few words bearing on the favorable references to the Carnegie Foundation's report, made here to-night, and to the report of the Council on Medical Education. As will be seen, these reports differ. Mr. Flexner who inspected thirty-four colleges in six different states, Colorado, Illinois, Iowa, Missouri, Nebraska and Utah, during the month of April, 1909, condemned, to a certain extent, every medical college in Illinois, excepting one, which he criticized. He, however, pronounced as acceptable to the Foundation three different schools, unreservedly condemned the remaining nine, and pronounced Illinois a "plague spot" for the reason that these nine "exist and prepare candidates for the Illinois examinations in unmistakable contravention of the law and state rules." But of the schools so unreservedly condemned by Mr. Flexner, four are pronounced acceptable to the Council on Medical Education in the report read to-night. Query: Who is right, Mr. Flexner or the Council?

As an exception seems to be taken to my remarks concerning Mr. Flexner, permit me to read from his report which lies on the table before me. Mr. Flexner unsparingly condemns medical colleges in nearly every state in the Union. He states that scarcely more than thirty of the 155 medical schools of the United States enforce a definite entrance requirement. His strictures on the teaching facilities are no less severe. According to his report, only some thirty of the 155 schools are now fairly equipped with the necessary laboratories, and fewer than thirty enjoy acceptable hospital facilities. Finally Mr. Flexner remarks that only about a dozen of the 155 medical schools have the clinical facilities that they need. So it would appear that the conditions reported by Mr. Flexner as existing in Illinois are more than duplicated in other states.

There is much that I would like to say to you regarding the State Board of Health's administration of the law, but, as my time is limited, I will close and thank you for your attention.

DR. JOSEPH ZEISLER: The remarks of Dr. Egan prompt me to say a single word in regard to the Flexner investigation. I believe there are a great many who will side with me when I say the Flexner report was in many ways one of the most important, one of the most helpful things, that could have happened to the progress of medical education in Illinois and elsewhere. Flexner may have been a little bitter or severe in some instances; but was the report really unjust, when we compare the status of medical education in some of the best schools in this country with that elsewhere, as, for instance, in Berlin, Vienna, Bonn, etc.? Do we not occupy a much inferior position, taking the average medical school in this country, as compared with European schools? I do not wish to enlarge on this thought, except to say that I believe this report, even if it was somewhat harsh to the school with which I am connected, was a good thing. Let me cite one single instance of medical education in Chicago.

I have had occasion for four years to watch the medical career of a person who went through a college in Chicago which has the right to turn out doctors. It was an evening school. That person could not write English grammatically, and though a German, not that much better. Being therefore rather illiterate that person was accepted by that college, passed through school by paying ten dollars every month, received the degree of "Doctor of Medicine," and came up for the State Board examination. Gentlemen, it is up to the State Board now in the examination of that person, whom I know to be quite unfit for the medical profession, to exercise that check which is absolutely necessary for the protection of the people of the State of Illinois. I ask you, gentlemen, does the State Board of Health of Illinois exercise such a check? Is it not possible for such people, as I described, to slip through on a written examination, which means very little indeed, and be let loose upon the populace?

COUNTY AND DISTRICT SOCIETIES.

ALEXANDER COUNTY.

The Alexander County Medical Society held its annual meeting at the Commercial Club rooms, in Cairo, Dec. 15, 1910. There was a large number of the physicians of the county present, and the affairs of the society appear to be in a prosperous condition. One new member and one new application for membership were received. The following officers were elected for the ensuing year: President, S. B. Cary, Cairo; vice-president, Samuel Dodds, Cairo; secretary-treasurer, James W. Dunn; delegate, W. F. Grinstead; alternate, Dr. W. C. Clarke; member board of censors, Dr. H. S. Davis. Drs. J. B. Hibbitts, B. S. Dickerson, Wm. H. Fields and A. A. Bondurant presented interesting clinical cases which were freely discussed by the different members of the society, after which the society adjourned.

JAMES W. DUNN, M.D., Secretary.

BUREAU COUNTY.

The Thirty-Fourth meeting of the Bureau County Medical Society was held at the City Hall, Princeton, Thursday, December 1, with Dr. Horner of Tiskilwa in the chair. The following members were present: Drs. C. C. Barrett, M. H. Blackburn, M. J. Coveny, S. W. Hopkins, C. Horner, B. F. Landis, F. Lewis, A. H. Malm, A. E. Owens, H. M. Owens, F. C. Robinson, J. J. Moran, C. C. Scott, H. D. Steele, L. M. Wiman and O. J. Flint. The following visitors were present: Drs. J. F. Miller, William Hessert, V. D. Lespinasse from Chicago, Hoffmann, Hafler, Hall, Oliver, Melick, Bushee, Wickersham, Downer, Hayden L. Fischer, also Rev. Barrett, Mrs. Cox, H. M. McKee, Mrs. Hessert, Mrs. Barrett, Mrs. Carlson, Mrs. Gibbs, Mr. Immke, Mr. Hodgman Sr., and John O'Donnel. The minutes of the preceding meeting were dispensed with owing to the lack of time. The officers elected are as follows: President, W. C. Griswold; first vice-president, F. Lewis; second vice president, C. C. Barrett; secretary and treasurer, O. J. Flint. The meeting was adjourned until 1 o'clock and was called at that hour.

Dr. Miller then read a paper on "Poliomyelitis" and he said in part that the first recorded epidemic was in Louisiana in 1841. The second in Sweden in 1881. The total number of cases reported up to 1905 was less than 1,000. From 1905 to 1910, twenty-five epidemics occurred with 8.054 cases. These do not include the isolated ones. It is distinctly a summer disease, which, unlike most contagious diseases, has been more prevalent in the smaller towns. There has rarely been more than one case in a family. There is little doubt that the virus can be carried by a healthy person to a third party and some evidence that the disease may be contagious even several years after the patient has suffered from it.

The disease is evidently microbic in origin although the germ has not been isolated, perhaps because it is too small to be seen even with a microscope. The nasal secretions contain the virus and may be the entrance way for the virus to a large extent. It resists freezing for 40 days or drying for 15 days. But a temperature of 130° F. for one-half hour destroys the virus promptly, also either hydrogen peroxid or carbolic acid has the same effect. The most common symptoms are sore throat, which may be slight, fever from 100 to 104, intestinal disturbances, either constipation or diarrhea, sweating often profuse, generalized pain and tenderness with general rigidity and paralysis, hyperalgesia of the skin and usually a decrease of white corpuscles, although this is not constant.

Poliomyelitis should be diagnosed from trichinosis and meningitis. There is a history in trichinosis of eating raw meat, often vomiting, then severe intestinal

disturbances and then the lapse of 8 to 10 days before the appearance of muscular soreness and rigidity. This latter is an important diagnostic point. Edema of the face and eyes is often present and the blood shows eosinophilia. In differentiating poliomyelitis from meningitis the absence of mental symptoms (as delirium), lessening of leukocytes, soreness and rigidity confined to two or more limbs or more often to one leg or foot, speak for anterior poliomyelitis. When in doubt resort to lumbar puncture as by this means meningitis, if present, may be determined and a serum used, which if injected early, is curative. For this reason an early diagnosis is important. As yet no specific treatment has been discovered so the disease can only be treated symptomatically, but most important is the prophylaxis. All cases should be quarantined for at least six weeks.

Dr. Wm. Hessert talked on "Treatment of Fractures," making his paper additionally interesting by the use of stereopticon views.

Dr. V. D. Lespinasse spoke on "Blood-Vessel Anastomosis," which was given in the following divisions: Older attempts at blood-vessel unions; Lespinasse magnesium ring (its points of superiority); conditions suitable for operation; transfusion for acute anemia and shock; senile or arterio-sclerotic gangrene; repair of all wounds of blood-vessels; transplantation of legs, arms, and kidneys; cure of ascites due to cirrhosis of the liver; removal of emboli from this point of lodgment; and cure of hemorrhage of the new born. Dr. Lespinasse's paper was instructive as well as very interesting.

Dr. A. E. Owens closed the program with his paper on "Vaccine Therapy." He related some of his experiences along this line of treatment from which he believes some good results have been obtained.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, Nov. 2, 1910

A regular meeting was held Nov. 2, 1910, with the president, Dr. Alexander Hugh Ferguson, in the chair. Dr. D. A. K. Steele read a paper entitled "The Matas Operation for Popliteal Aneurism." The paper was discussed by Drs. Charles Davison, Charles E. Humiston, A. J. Ochsner, Carl Beck, Alexander Hugh Ferguson, and in closing by the author of the paper. Drs. V. D. Lespinasse, G. Carl Fisher and Joseph Eisenstaedt, contributed a joint paper entitled "Blood-vessel Anastomosis with Magnesium Rings; Demonstration of Specimens and Operation on Dog." This paper was discussed by Dr. Allen B. Kanavel. Dr. George E. Shambaugh contributed a paper entitled "The Development of the Theory of Hearing." The paper was discussed by Dr. J. Holinger, and in closing by the author of the paper. Adjourned.

DISCUSSION ON THE PAPER OF DR. STEELE

DR. CHARLES DAVISON: I saw Dr. Steele perform both of these operations on popliteal aneurysm, and watched their convalescence during the entire time and I was much taken with the kindly manner of the convalescence. There was pulsation in the distal arteries after the operation, showing either that there was anastomosis naturally sufficient to carry on the circulation or that there had been dilatation of the arteries forming the anastomosis. As I understand the Matas operation, under ideal conditions, the expectation is to make a patulous opening through the aneurysm after intracapsular suture in such a manner that the current of blood will be carried on uninterruptedly through the sutured aneurysmal sac, carried on permanently so as to furnish blood to the distal extremity. A sacculated aneurysm, as I understand it, is the ideal form. The intracapsular pursestring is passed down at this point (illustrating on blackboard), cutting off the artery from the sacculated condition. When the sac is closed off by intracapsular sutures the artery is left patulous for the current of blood to pass in a normal direction. Any operation, which has for its idea

the repair of an injured or diseased organ and the restoration of its function, not destroying the organ or diverting its function into some other organ to do double work, is a successful achievement in surgery, and whether the blood is carried permanently through the patched artery, or carried temporarily through the patched artery, in either case the circulation is carried on without interruption until the anastomotic arteries are sufficient to handle all the blood supply. In fusiform aneurysm, where there is dilatation of the walls of the artery in every direction, the Matas operation is entirely different. It is the obliterative form, and you put an intracapsular pursestring around both openings of the artery, and then close the whole thing tightly by intracapsular suture in the same manner as Dr. Steele did. Even then, it is a great advance over the older operations, over the Hunterian form of ligation or the complete dissection of the aneurysmal sac and ligation of the efferent and afferent arteries. To my mind it is a distinct advance because it does not disturb the tissues to the extent that infection may occur, as in the Hunterian ligation or complete dissection of the sac. The suturing is entirely inside the aneurysm. It does not disturb the structure outside at all. It does not interfere a particle with the anastomotic circulation which surrounds it. It does not produce any great amount of traumatism and subsequent inflammation, but the greatest point is the fact that the satellite vein is not interfered with at all. The veins may come along closely to the sac or be incorporated within it, and by this operation are not interfered with at all, and obstruction of the veins which oftentimes makes trouble is done away with. There is far less danger of gangrene of the extremity by the Matas operation, even in the obliterative form of the operation, than by any operation we have previously had.

DR. CHARLES E. HUMISTON: I have had experience with two cases of aneurysm treated by the Matas method, as described by Dr. Steele, and as both of them were successful I am glad to speak of them to-night. One has been reported and is incorporated in Dr. Matas' report which he made at the meeting of the American Medical Association in Chicago in 1908. At that time there were fewer than one hundred cases reported, only two reported from Illinois, one an atypical case by Dr. Beck, and my own. More than that number, however, had been operated on, and some of them had not turned out successfully. The larger one, the first one I attempted, and which proved to be successful in its result, was as large as a good sized cocoanut. The last one I operated on at the Cook County Hospital in August, 1910, the details of which I have not complete, as I did not expect to report it this evening, but I intend to do so later. In this case the aneurysm was the size of a baseball, popliteal, in a colored man, forty-three years of age, with a syphilitic history, the patient having been infected twenty years ago. This was undoubtedly a spontaneous aneurysm as there was no history of trauma recently or at any time. It was a sacculated aneurysm, the artery having ruptured, but there had been present a fusiform aneurysmal dilatation of the popliteal artery, to begin with. The technic as described by Dr. Steele was followed with a few minor and unimportant modifications. Instead of wiping the sac with gauze to irritate it, I painted it lightly with tincture of iodin, and the result was satisfactory. The operation as proposed by Matas himself has to do with obliteration of the artery and destruction of the sac, and he calls it obliterative endoaneurysmorrhaphy. The restoration of the lumen of the vessel is something, of course, to be desired, and he describes it later and refers to it as being desirable, but it is not the one thing that he desired his operation to be known for. The Matas operation means the internal suturing of the orifices of all vessels which enter or leave the aneurysmal sac, and the obliteration of the sac without doing injury to the surrounding nerves and other tissues. I believe that most failures come from attempting to restore an artery whose walls have already ruptured spontaneously and have given way. I recall one case at Cook County Hospital operated on for a small aneurysm just above the elbow, and with an attempt to reconstruct the artery. It ended fatally some time afterwards from secondary hemorrhage. The pulsation which takes

place in the sac following Hunterian ligation shows that the collateral circulation is already present, and in most aneurysms that have existed for six weeks or longer the collateral circulation has already been established to a great extent; and it will be found, especially in the popliteal region, that the foot will remain warm even though no pulsation is palpable in the arteries below the aneurysm. Destruction of the sac aimed at from the beginning and from its inner side without disturbing the surrounding structures will yield the best results in almost every case.

DR. A. J. OCHSNER: While in New Orleans some years ago I had an opportunity to examine the first case which Matas had operated on by the method which Dr. Steele has described to us and I have consequently followed this subject with especial attention and interest from the time of its introduction.

I believe that if one is cautious not to unduly traumatize the surrounding tissues, the results will be as perfect as they have been in these cases, provided the aneurysm is not too recent. I recall two cases, one of the femoral, the other of the popliteal artery in which I have performed the operation.

We have been very much pleased with the simplicity and the practicability of the operation. It reduces the operation to one of very much less gravity and very much less difficulty, provided one carries out simply the plan that has been explained to-night and heeds the precautions emphasized by Dr. Davidson.

DR. CARL BECK: I would like to speak of one or two points in connection with Dr. Steele's paper. The first is the very interesting fact that he has had one case with two aneurysms in one patient, which shows that the pathologic condition causing the aneurysm is to be considered in such cases of aneurysm. Of course, those of us who have had to deal with aneurysm have had to deal in most cases with traumatic aneurysms. These are entirely different in their treatment than the aneurysma dissecans, as it has been called, a pathologic condition of the vessel wall where a small opening is made by the impulse or impact of the circulation, and then the blood separates the layers of the vessel wall and fills them with blood so that an aneurysm is formed which looks fusiform, but which is really a sacculated aneurysm. In such a case the operation of Matas is very difficult, and as the wall of such an aneurysm is friable, these are the cases in which the results have not been as favorable as in the others. In traumatic aneurysm the Matas operation is an ideal method, in otherwise healthy individuals. While Dr. Steele has been very successful in the introduction of the wire, other surgeons have not been so successful in their results. I have used that method also but have had a fatality. A second point is this: Sometimes it is impossible to use that method or any kind of operative method. I have reported one case that has been treated in a way that seems to me very simple. The aneurysm, which was situated in the popliteal region, has been treated by the method of high frequency currents which gradually developed a total obliteration of the aneurysmal sac. I have not read much of experiments of that kind by others, but up to date there has been no recurrence of the symptoms, nor has the aneurysm appeared, so that I should recommend to try it.

DR. ALEXANDER HUGH FERGUSON: I would like to ask Dr. Steele if he used flexion at the knee-joint before proceeding to operate. It is an old treatment; sometimes it does well, and ought to be tried I think.

DR. STEELE (closing the discussion): I have not used flexion or compression or any other method of treatment than the operative procedure described in these two cases. I have in previous cases used that method, of course, and the older methods were not followed altogether by satisfactory results. My excuse for reporting these cases and bringing them to your attention as well as the Matas method is that so many new surgical procedures are brought to our attention, that unless there is a repetition of the technic of the operation, it is apt to be forgotten or overlooked. I think it is our duty when a distinct advance has been made in surgery, such as the Matas operation has been, to place it before the surgeons of the world, and let them try the operation, report their results,

and discuss from time to time the subject, so that the technic may be made familiar to the young surgeons so that they will use it in their practice.

It was rather interesting to have two aneurysms in one patient. Furthermore, it was interesting to see the improvement made by the introduction of silver wire temporarily in one case and permanently in the other, and in addition to that I have now a case of inoperable aneurysm of the descending arch of the aorta, in which I have introduced fifteen feet of aluminum bronze wire. Furthermore, I have used electrolysis consisting of twenty dry cells, with about one and a half volts to each cell and I continued the introduction for thirty minutes of twenty-five amperes of the twenty cells, which represented forty-five volts for half an hour through a needle which was inserted in the sac, but the patient complained of no pain. The aneurysm had eroded one or two ribs, so that there was an external tumor upon the left chest over the second rib where it disappeared by absorption. Pain was the principal thing the patient complained of for about a year, but singularly from the time of the introduction of the fifteen feet of wire and the use of electrolysis, the man was able to sleep all night and has been made comfortable since. Of course, it is too early to report as to what the ultimate result will be in this case, but from the standpoint of the relief of pain it has been a success.

DISCUSSION ON THE PAPER OF DRS. LESPINASSE, FISHER AND EISENSTAEDT

DR. ALLEN B. KANAVEL: Considerable experience with the suture method in experimental work and in two human subjects leads me to appreciate the simplicity of this technic. Those of you who have attempted the suture of blood-vessels are aware of the difficulty attending it, particularly in smaller vessels. I have seen Dr. Lespinasse work, I know how long and patiently he has worked, and he is to be complimented on the excellent result he has attained. I cannot refrain from speaking of the fact that, it seems to me, the Chicago medical profession ought to be congratulated on its relation to the development of vascular surgery. As you are aware, a great deal of work has been done everywhere, but it has remained for men in Chicago to make the three real advances to my mind that have been made in vascular surgery in the end-to-end union of vessels. In 1889 I think it was, the earliest suture was made successfully, but at that time the work was abandoned and nothing further was done for a time. Then Abbe in 1894 published his method of end-to-end suture, which later was doomed to failure. It remained for one of our own surgeons, Dr. Murphy, to suggest the method of invagination which, as you know, has been most successful, and I dare say that if all of the cases of sutured vessels end-to-end which have been reported in the literature were collected, it would be found that the method of Murphy, in spite of certain disadvantages, has given the best results of any method of end-to-end suture at the present time. There are at least fifteen cases in the literature that have been entirely successful in which end-to-end invagination was resorted to. The next step was taken in Chicago, carried on by Carrel at the University of Chicago, in which he introduced a method he had practiced before, but perfected here, namely, that careful suture of vessels which has entirely revolutionized experimental work in vessel surgery. It has opened up a vast field for experimental work to those who have perfected themselves in the technic. It, however, is not feasible for men who are not acquainted with the technic, and who have not practiced for a long time. Moreover, it is not practical for the average man to do this operation at any particular time. It remained for Dr. Lespinasse to suggest this method; this simple, feasible method, which almost any surgeon with the average technic can perform, giving to us, as he has demonstrated here to-night and by other work, results fully equal to those procured by any other method. Moreover it is applicable to small vessels, which is not true of either the Murphy or Pyer methods. So I say Chicago should be particularly proud of these three advances. Further than this, I feel that I cannot add anything more to the subject other than to emphasize certain points that Dr. Lespinasse has made, and that Dr. Carrel has made, with which you are undoubt-

edly familiar. Particularly will I speak of the extraordinary care which it is necessary to use in dealing with the intima. Dr. Lespinasse spoke of that, but time and again I have found that the slightest traumatism of the intima with the forceps or any other means has led to thrombosis. The use of vaselin, with small needles and small silk, will give you success, no matter whether you use the suture method or the magnesium plates, but in using the suture I would warn you that it requires a great deal of care and work before it is safe to attempt that method.

DISCUSSION ON THE PAPER OF DR. SHAMBAUGH

DR. J. HOLINGER: There is a great practical importance connected with the investigation of tone perception. It lies in this, that as long as we have no clear theory of hearing, we cannot explain our microscopical findings in pathology of the labyrinth, and can not build up a pathology of deaf mutism. The changes that are found in the labyrinth of deaf mutes have caused considerable discussion by men engaged in our specialty, and slowly we are making headway towards an explanation. You understand very well that as long as we do not know which parts are concerned in the perception of sounds, we cannot explain why in one case deafness was due to changes in Corti's organ, and why in another case it was due to a change in the membrana tectoria, and so forth. It is evident that upon a clear theory of tone perception depends our explanation of microscopic specimens and consequently the pathology of deaf mutism.

Dr. Shambaugh has done a great deal of work on the labyrinth, and has attained excellent results. It was my privilege last summer to accompany him to several clinics in Europe, and it was gratifying to see how highly his work was appreciated. In fact, one man, who is an authority on the pathology of the labyrinth, told him that his specimens were unique.

As to Dr. Shambaugh's theory of hearing, it is original with him to put the different end organs in the labyrinth absolutely on a parallel as regards physiologic action. However, there are some points I would like to refer to which do not entirely coincide with this theory. First: The artery below the basillar membrane has only been observed in animals. It has never been seen in the human. We know that the human being hears the tone A always as A, the animal may hear it at times as C. In other words, the influence of that artery is irrelevant to the animal. Furthermore, the other changes in the basillar membrane which make it unfit for vibration are also observed in animals and not in the human, and we do not know whether the animal hears those sounds which correspond to that part of the cochlea.

A new point in favor of a vibrating basilar membrane: Dr. Shambaugh spoke about the experiments made in the clinic of Professor Siebenmann producing over-irritation of certain parts of the cochlea of guinea pigs. These guinea pigs were exposed for a long time to one strong and clear tone. Certain and always the same parts of the cochlea have been found degenerated in those animals, if the same tone was used. But another experiment has been made, namely: A pistol shot was fired quite close to the ear of a guinea pig and the animal was killed immediately afterwards. The result was that the cells of Corti's organ were scattered in all directions, so that there was absolutely no possibility of recognizing the original construction of the organ of Corti. It is impossible to explain this result of the acoustic trauma by ascribing it to the membrana tectoria, which is very soft, and without any distinct structure. It is hard to imagine how the membrana tectoria in transmitting this strong sound should have been able to destroy Corti's organ so completely. On the other hand the whole experiment explains itself, if you take the membrana basilaris as the vibrating mechanism which, through its extremely violent vibrations, throw the cells of Corti's organ, which rest upon it, out of position. An interesting part of this experiment is, that if the guinea pig is not killed immediately we find that six weeks after such an organ has been destroyed in this way, it is completely restored. If the experiment is repeated, restitution cannot take place and we find

then an irregular scar and total deafness. But all these experiments bring us closer to the point we are seeking and Dr. Shambaugh has certainly led us a step closer to it.

DR. SHAMBAUGH (closing the discussion): Regarding the disturbances in the organ of Corti brought about by a discharge of a pistol before the ear, I had an opportunity of looking over those specimens in Dr. Siebenmann's laboratory. It did not seem to me that such distortions of the cellular structures could be produced any more readily by such vibrations as might be produced in the basilar membrane than they could be by vibrations of the tectorial membrane. My impression is that such distortions are not dependent upon the vibrating mechanism in the labyrinth at all but are the result of injury due to concussion.

Regular Meeting, Nov. 9, 1910

A regular meeting was held Nov. 9, 1910, with the President, Dr. Alexander Hugh Ferguson, in the chair. Dr. Charles H. Mayo, of Rochester, Minnesota, read a paper (by invitation) entitled "The Ligation or Partial Extirpation of Exophthalmic Goiter." The paper was discussed by Drs. A. J. Ochsner, Arthur Dean Bevan, J. Halpenny (Winnipeg), D. W. Graham, L. Schooler (Des Moines), Alexander Hugh Ferguson, and the discussion closed by Dr. Mayo. Dr. Franklin H. Martin read a paper entitled "Significance of the Lane Kink in the Ileum."

Adjourned.

DISCUSSION OF DR. MAYO'S PAPER

DR. A. J. OCHSNER: Mr. Chairman, after the magnificent exposition of this subject that has just been made by the surgeon who has introduced in this country the surgery of exophthalmic goiter, and has developed it, both in its practical and in its scientific departments, it seems quite impossible for me to add to the subject. I believe personally that every one of you will have enough to think of about this subject without having new features introduced. You have heard the subject presented in a systematic manner. You have heard the history of exophthalmic goiter; you have heard its pathology and you have heard the philosophy of exophthalmic goiter, and all that I could add would simply be to emphasize the various points that Dr. Mayo has made.

DR. A. D. BEVAN: Mr. Chairman, I am sure you have all been very much interested, as I have been, in the presentation by Dr. Mayo, who has done such a vast amount of this work, and such excellent work.

If I could add anything to what he has said it would be in going over a little of the technic of the operations for exophthalmic goiter. I believe, as does Dr. Mayo, that the theory of Möbius has been definitely proved to be true, that exophthalmic goiter and the symptoms resulting from this disease are due to the over-secretion of the gland, or possibly at times to an altered secretion, and I think Kocher has shown that in order to cure exophthalmic goiter, basing his work on the theory of Möbius, it is our duty to diminish to approximately normal the internal secretion of the gland. How is this to be done, and at what time are we to resort to operative interference? I have had the same experience that Charles Mayo has had in losing cases where we have tried to do too much. I remember three cases I have lost where I removed one entire lobe and part of another in very sick patients, and I am rather inclined to believe if I had adopted the plan of Kocher I would have succeeded in some of these cases in saving their lives. I believe in the very bad cases we should ligate one or two thyroid arteries. As to the technic, Crile adopts a rather stealthy way, without any knowledge of the patient beforehand. Some morning he comes into the room and ligates one of the superior thyroid arteries. Personally I have not much sympathy with Crile's method of doing these operations without the full knowledge of the patient. After listening to Dr. Crile's persuasive argument one day I tried it on an intel-

ligent woman, and she never forgave me. I believe that in almost all cases ether is to be preferred as the anesthetic. In some very bad cases cocain may be used in the following way: About an hour before the operation give hypodermically one-quarter grain of morphin and 1/150 hyoscin. Then 1/1000 solution of cocain should be employed with a little adrenalin added to it.

The technic which I have adopted has been to make a little incision about an inch and a half in length parallel with the normal skin folds in the neck just at the upper border of the thyroid gland, just in front of the sternocleido-mastoid. The incision is taken down to the deep fascia. Then the sterno-cleido-mastoid is drawn to the side. Then the omo-hyoid passes right in front of the artery. There is this little piece of surgical anatomy which you should remember, and that is that the artery below the hyoid bone is internal to the carotid and the sterno-cleido-mastoid. You find the large artery before seeing the pole of the gland itself. Then you follow that down to the pole. In many of the cases the mere ligation of the superior thyroid will suffice. In the more radical operation the removal of one lobe of the gland, the procedure should be the Kocher incision, and ether anesthesia, as a rule. I think we owe a great deal to Dr. Charles Mayo for showing us that ether anesthesia is quite as safe in the hands of an expert, as I firmly believe it is, as cocain, in the resection of the goiter. The incision should divide the skin, superficial fascia and platysma, and should be very well dissected up, so that a large flap may be made and held by the assistant with a retractor. Then the superficial layer of the deep cervical fascia should be divided in the middle line, and the sterno-hyoid and sterno-thyroid muscles should be drawn to one side. I always ligate the superior thyroid en masse, and then the inferior thyroid. I do not believe we should ever remove more than a single lobe, and if there is a large amount of thyroid left on the opposite side I believe we should complete the operation by the ligation of the superior thyroid on that side.

I believe that we owe a great deal to Möbius, to Kocher and to Charles Mayo for teaching us the pathology and treatment of exophthalmic goiter. I believe the time has come when we can say to the patient who has come to us, especially if he comes early: "You have exophthalmic goiter. You can be cured by surgical operation with much less danger than leaving the condition alone to Nature."

DR. J. HALPENNY, Winnipeg, Man.: Mr. Chairman, I can say very little about exophthalmic goiter. With reference to the para-thyroid glands, which were referred to to-night, after a slight amount of experience in experimental work with those glands, one is compelled to conclude that at the present time the para-thyroid glands are not in the practical arena of surgery at all. There are various assumptions regarding those glands that are not fully borne out by experimental work. The statement has been made by many that if the para-thyroid glands are all removed you in every case get death by acute tetany. One is unable to find that this always occurs. One is told if you remove the para-thyroid glands alone you get death more quickly than if you remove the thyroid with para-thyroid glands. This one cannot find to be true. Death comes on more quickly with the complete operation than when one removes the para-thyroid glands alone. One finds that when the thyroids are removed and the para-thyroids left behind there is a certain change in the histologic structure of the para-thyroid, so that it takes on the structure of the thyroid. This would lead one to conclude that these glands are so closely related that the one is able to take up the work of the other to a certain extent.

In the literature one finds that the argument is put forward that the para-thyroid glands are there to check up the thyroid glands; that they are not entirely a different structure, except that they are to check up the thyroid glands, and the statement is made that the probable explanation is this: The thyroid gland normally accumulates or secretes some toxic substance which the para-thyroid glands destroy. Remove the para-thyroid glands and you have the toxic

substance accumulating very rapidly, and you get death by tetany. The fact that the resultant tissue very closely approximates the tissue when the thyroid is left behind makes it appear that these two glands have work of the same kind to do.

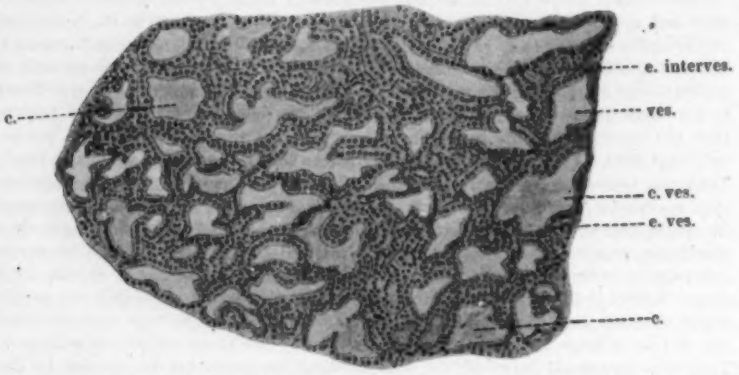

Fig. 1.—Parathyroid of dog, eighty-three days after thyroidectomy, showing vesicles, some of which contain colloid; × 120; *c.*, colloid; *e. interves.*, intervesicular epithelial tissue; *ves.*, vesicle; *c. ves.*, colloid vesicle; *e. ves.*, epithelium lining to vesicles.

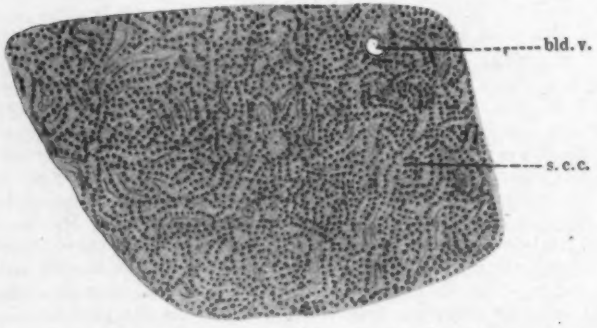

Fig. 2.—Normal parathyroid of dog; × 120; *s. c. c.*, solid columns of cells; *bld. v.*, blood vessel. To be compared with Figure 1.

In one dog I removed all the parathyroid glandules and verified the result by serial sections showing the capsule of each complete. In another the thyroid gland was completely removed and two external parathyroids left *in situ*. The resultant tissue in these two animals was practically the same and was intermediate between normal thyroid and normal parathyroid. A study of Figures 1, 2, 3, and 4 will show this quite clearly.

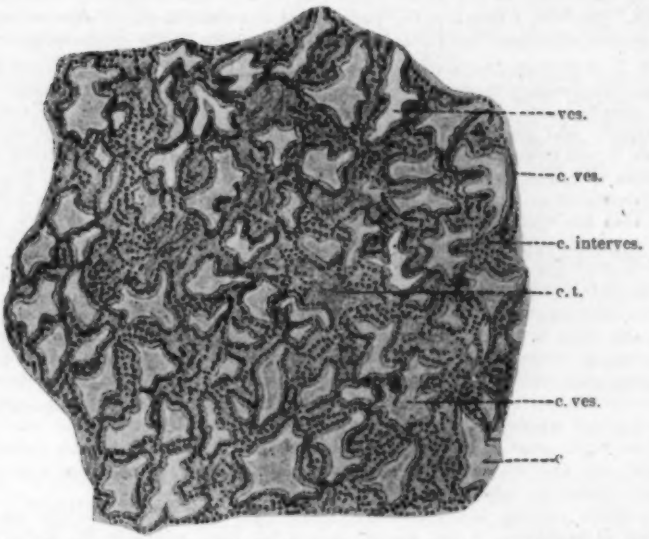

Fig. 3.—Thyroid of dog, thirty days after removal of all four parathyroids. The vesicles have become very irregular in shape and there seems to be an increase in the intervesicular epithelial tissue; × 120; *ves.*, vesicle; *e. ves.*, epithelium lining vesicles; *e. interves.*, intervesicular epithelial tissue; *c. t.*, connective tissue; *c. ves.*, colloid vesicle; *c.*, colloid. Compare with Figure 4.

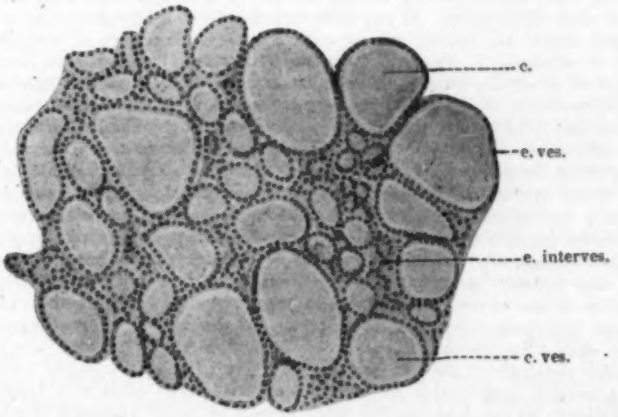

Fig. 4.—Normal thyroid of a dog, for comparison with Figure 3; *c.*, colloid; *e. ves.*, epithelium lining vesicles; *e. interves.*, epithelial intervesicular tissue; *c. ves.*, colloid vesicle; × 120.

Dr. D. W. Graham:—I would not at this time attempt to add anything, by way of discussion, to the paper which has so ably and completely covered the subject. However, I desire to say just a word and endorse and emphasize the use of a general anesthetic for goiter operations especially in the exophthalmic type.

DR. L. SCHOOLER, Des Moines: Mr. Chairman, I would be a very happy man, indeed, this evening if I could say anything that would add to the paper you have already heard. I can only perhaps reiterate a few things that the essayist has already laid down. I was very glad to hear him emphasize one point, and I think it will inure to the benefit of a large number of patients, and that is that all cases of goiter are not surgical cases. I have seen a good many cases of goiter operated on that in my judgment were not surgical cases; and the further point that life saving operations in advanced cases of goiter is bad surgery, as it is in a great many other cases. Operating when the patient is moribund will not add anything to the statistics in this class of cases any more than it will in any other cases.

THE CHAIRMAN (Dr. Ferguson): I would like to ask Dr. Mayo one question, and that is in regard to the class of cases where thyroidism comes on every month or two or three months, and all the symptoms are directed towards the heart and vomiting, with very little enlargement of the gland, no protrusion of the eyeball, no tachycardia between times, no trembling of muscles, and no eye-symptoms whatever. I have had two or three such cases. One was supposed to die in some of those extreme conditions of depression, became pulseless, vomited and had diarrhea, but is slowly getting better. That case was completely relieved by operation.

Dr. Mayo (closing the discussion) said: I am glad I did not take up the question of operation. I had already talked too long, moreover Dr. Bevan has handled it better than I could. We do the same type of operation. It is an operation proposed by Wolfler in 1886, and afterwards adopted by Kocher. There are one or two points concerning ligation that are worthy of discussion. If the case is so bad that you do not feel warranted in doing a thyroidectomy, the ligation of both superior thyroid arteries and nerves and lymphatics is indicated. If the resulting improvement does not permit thyroidectomy, it is better to ligate the right inferior artery leaving one artery to supply the gland, and later take out part of the gland. If you deem it better to do a thyroidectomy to begin with, and should the patient relapse with a little enlargement of the left lobe, then it is advisable to ligate the superior artery and lymphatics on that side, leaving one artery to supply the gland. If the patients relapse they can be helped by resection or ligation of the remaining lobe. We have found it necessary to ligate the third artery several times. Every tenth human being has a fifth artery coming up along the line of the trachea as an anomalous vessel.

Regarding the question of nerve injury: A number of patients have lost their voices before operation. Surgeons should not operate on the thyroid without examining the larynx. Many believe that paresis of one recurrent laryngeal nerve would produce the lost voice. It does not. A patient's voice may be all right immediately after operation, and the next day it may be gone, but you can assure that patient that it will come back again. It is a condition of temporary congestion of the nerve which has been pressed upon by the tumor. The left recurrent laryngeal nerve sets deeper than the right, and on that account it may be caught by pressure, therefore the tumor on the right lobe is more apt to produce paralysis of the left, than of the right recurrent laryngeal. We have made a careful examination of more than a thousand cases and found that approximately 30 per cent. showed some paresis of either abductor or adductor in the hard or large goiter, before operation. With the case that is not doing well under the anesthetic or during operation, and you are in a great hurry, saving the recurrent laryngeal nerve becomes a secondary consideration. Five times I have had to do a tracheotomy to start respiration. One of my earlier patients died on the table, because I accepted a moribund case.

We have more exophthalmic goiters in this country than they have in Europe. Some observers attribute it to the rapid mode of living. All animals are subject to goiter. Nearly 90 per cent. of the dogs around the great lakes have goiter. The common field gopher has a neck one-half larger than normal during the rutting season, and the deer's neck is one-third larger.

The question of the parathyroid has been brought up. Wherever Nature has given us double organs, we will stand the loss of half of them without much harm. In regard to the manipulation of the parathyroids, I am reminded of the boy who drew a picture of a lion and it looked so real it scared him. However, I do think that we should not take chances of injuring both groups of parathyroids in an operation which involves both sides of the gland.

In this country the operations which have produced tetany have been mostly secondary operations on the remaining lobe.

There are certain types of nervous symptoms to-day which are difficult to differentiate. We know that certain types of Bright's disease give us symptoms of exophthalmos. When I see a case which is hard to diagnose as exophthalmic goiter, I say that it probably is not exophthalmic. The *x*-ray will remove these cases, but the improvement will not last. Something can be done for these patients in the line of treatment. Many things are good; that is the unfortunate part of it. They usually get the run of everything, and when almost moribund they are turned over to the surgeon.

Regular Meeting, Nov. 16, 1910

A regular meeting of the Chicago Medical Society was held Nov. 16, 1910, with the president, Dr. Alexander Hugh Ferguson, in the chair. Dr. W. S. Thayer, Baltimore, Md., read a paper entitled "Hemolytic Jaundice," which was discussed by Drs. Frank Billings, Karl L. Koessler, Joseph M. Patton, John A. Robison, Alfred C. Croftan, and in closing by Dr. Thayer. Dr. John B. Roberts, of Philadelphia, read a paper entitled "The Operative Cure of Some Cicatricial and Congenital Deformities of the Face." This paper was discussed by Drs. W. L. Ballenger, D. A. K. Steele, Truman W. Brophy, John P. Lord, Lewis Schooler, Chas. M. Robertson, E. F. Snydacker, and in closing by the essayist.

Adjourned.

CLAY COUNTY

The Clay County Medical Society met at Flora, Dec. 20, 1910, in the Carnegie Library at 1:30 p. m. The following doctors were present: G. N. Steely and E. P. Gibson of Louisville; J. M. Boyles, N. W. Bowman, J. B. Hozel, Jr., Flora; John Shore, Sailor Springs; H. O. Lewis, Ingraham; B. H. Crews and J. W. Walton, Clay City, and Dr. Vosberg of St. Louis. Dr. Vosberg addressed the Society on "Abdominal Pain," which was one of the most interesting and comprehensive addresses we have ever had the pleasure of listening to. After brief discussions the society extended to Dr. Vosberg a vote of thanks. Adjourned.

EFFINGHAM COUNTY

The Effingham County Medical Society held its annual meeting Tuesday, Dec. 13, 1910, at Effingham. The following officers were elected: J. H. Walker, president, Effingham; F. W. Goodell, first vice-president, Effingham; E. W. Brooks, second vice-president, Beecher City; H. Taphorn, secretary (reelected), Effingham; G. H. Haumesser, treasurer (reelected) Shumway; C. F. Burkhardt, delegate, Effingham; T. J. Dunn, alternate, Elliotstown; board of censors—E. A. Bing, Altamont; F. Buckmaster, Effingham; J. B. Walker, Effingham; O. J. Cromwell, Effingham; J. L. Kershner, Dietrich; member State Medicolegal Committee, T. J. Dunn, Elliotstown.

Following election of officers Dr. G. H. Haumesser read a very interesting paper on "Diabetes Mellitus." After thoroughly discussing the paper, the society adjourned.

GREENE COUNTY.

The regular meeting of the Greene County Medical Society was held at Hotel Roodhouse, Roodhouse, Friday, Dec. 9, 1910. Members present: Howard Burns, S. F. March, J. W. Adams, J. J. Ebersman, L. J. Hensler, Carrollton; F. H. Russell, Eldred; A. Royal, Wrights; C. B. Foreman, Kane; H. W. Smith, E. H. Higbee, C. R. Thomas, L. O. Hamilton, Roodhouse; G. W. Burns, H. W. Chapman, F. N. McLaren, A. W. Foreman, W. C. Day and H. A. Chapin, White Hall. Visitors present: R. J. Grimes, Marietta; W. D. Chapman, Sylvis; W. B. Dalton and T. D. Doan, Scottsville, and W. L. Kincaid, Roodhouse. Dr. McLaren was chosen Censor *pro tem.*, Dr. Shirley not being present. The application of Dr. T. D. Doan for membership was presented to the board of Censors but he not being a resident of Greene County was not eligible to membership and the application was withdrawn. On motion of Dr. Howard Burns the courtesies of the Society were extended to Drs. W. D. Chapman, W. B. Dalton, R. J. Grimes, T. D. Doan and W. L. Kincaid. The following were unanimously elected officers for the ensuing year: W. C. Day, president; H. W. Smith, first vice-president; F. H. Russell, second vice-president; H. A. Chapin, secretary and treasurer; censors: Howard Burns, H. W. Chapman and A. W. Foreman; member of the legislative committee, Dr. F. N. McLaren. After the election adjournment was taken for dinner.

Meeting was called to order at 1:15 p. m. at the City Hall. The application of W. L. Kincaid for membership was referred to the board of censors to report at the next meeting. Dr. L. J. Hensler of Carrollton read a very interesting paper on "Pneumonia" and Dr. C. B. Foreman, of Kane, reported an interesting case of "Tuberculosis of the Knee Joint, with Tuberculin Treatment and Recovery." Both papers brought forth interesting discussions by all present. The board of censors reported Kane as the next place of meeting with Dr. March of Carrollton, C. O. Bulger of Greenfield, C. R. Thomas and E. H. Higbee of Roodhouse as essayists, after which the society adjourned. H. A. CHAPIN, Sec'y.

JACKSON COUNTY

The December meeting of the Jackson County Medical Society was held in the parlors of the Jackson Club at Murphysboro Thursday, Dec. 15, 1910. Present: Drs. Molz, Sabine, Grizzell, Carter, Horstman and Essick of Murphysboro. Dr. Tweedy, Vergennes. Visitor: Dr. O. House, DeSoto. Applications of Drs. O. House, DeSoto, and W. W. House, Oraville, read and both gentlemen accepted as members. Officers elected for 1911: President, Dr. C. C. Grizzell, Murphysboro; vice-president, Dr. R. S. Sabine, Murphysboro; secretary-treasurer, Dr. Ray Essick, Murphysboro; Censors, Dr. Sabine, three years; Dr. Horstman, two years; Dr. Tweedy, one year. Adjourned. RAY B. ESSICK, Secretary-Treasurer.

MADISON COUNTY

The Madison County Medical Society met in Alton Dec. 2, 1910, in the rooms of the Retail Merchants' Association, with Dr. G. Taphorn in the chair. Members present: Cook, Hastings, Kerchner, Robinson, Ferguson, J. H. Fiegenbaum, Taphorn, Haskell, W. H. Grayson, Luster, Smith, Larrabee, Johnson, Halliburton, Ihne, Burroughs, Pfeiffenberger, Joesting, Wilkinson, Fisher and the secretary. Visitors: Drs. E. C. Spitze, Fred Wade Jones and John H. Wedig. Five applications for membership were read and referred to the board of censors who reported favorably on the following: Drs. J. Harrison Wedig, Granite City; Chas.

H. Merritt, Alton; Wm. J. Marney, Granite City; John L. Seebold, Madison; Fred Wade Jones, Alton; all of whom were unanimously elected.

The annual reports of the secretary and treasurer were read and referred to an auditing committee composed of Drs. Tulley and Ferguson, who examined the same and reported them correct, when by vote of the society they were approved and ordered filed. Dr. E. A. Cook moved that the sympathy of this society with best wishes be extended to the family of our fellow member, Dr. T. P. Yerkes of Upper Alton, who is in the hospital at Rochester, Minn., undergoing a surgical operation. This message was ordered sent by telephone and Drs. Cook and Pfeiffenberger were appointed as a committee to execute the order.

The annual election of officers resulted as follows: President, W. H. C. Smith, Godfrey; vice-president, E. C. Ferguson, Edwardsville; secretary, E. W. Fiegenbaum, Edwardsville; treasurer, J. H. Fiegenbaum, Alton; delegate, J. M. Pfeiffenberger, Alton; alternate, F. W. Kerchner, Glen Carbon; medicolegal member, Lay G. Burroughs, Collinsville; member of the board of censors for three years, J. B. Hastings, Alton.

Dr. W. H. C. Smith presented his resignation as a member of the board of censors and Dr. W. H. Grayson was elected to fill the unexpired term of one year.

The retiring president then introduced the newly elected president, Dr. W. H. C. Smith, who took the chair after a short inaugural address containing promises of devotion to the interests of our society. Dr. Tulley moved a vote of thanks to the retiring officers which was unanimously adopted. He also moved that the chair appoint a boosting committee to gather in new members, which was adopted and the chair appointed as such committee, every member of the society.

Dr. Luster moved that we hold a special meeting some time in January which was adopted after being amended by Dr. G. Taphorn fixing the place of meeting at Alton. The secretary was instructed to fix the date and to invite our councilor, Dr. Carl E. Black, to address us on this occasion.

Dr. Pfeiffenberger announced that the board of education of Alton had instituted a series of talks to the high school pupils on the subject of health and hygiene. These addresses are to be given by various physicians of Alton from time to time during the school year. On motion of Dr. Pfeiffenberger, this society expresses its commendation of above action of the board and instructs the secretary to communicate this action to the secretary of the Alton board of education.

The secretary then read a paper which was ordered printed in the next issue of "The Madison County Doctor." Some discussion followed on the subject matter of the paper, and as a result thereof a committee was appointed to draft suitable resolutions to present to the State Board of Health and to the incoming Legislature. Said Committee on Public Health and Legislation is composed of Drs. Robinson, Sims and Binney to which were added, by motion, the president and secretary.

E. W. FIEGENBAUM, Sec.

M'LEAN COUNTY.

The first meeting of the fifty-seventh year of the McLean County Medical Society was held at the Illinois Hotel, Bloomington, Sept. 8, 1910, President Dr. Mammen presiding. The communication of the Legislative Committee of the Illinois State Medical Society was read and discussed. This letter asked that a member be appointed on the Auxiliary Legislative Committee for the McLean County Medical Society. Many members favored having the entire Judicial Committee act in the capacity. A motion that the chair appoint a single member was made, and Dr. Fenelon was appointed, but upon his declining to serve, Dr. J. B. Taylor was appointed, the object being to concentrate the forces.

A spirit of mobilization of the medical profession of the county for the purpose of electing men and to follow up the work of conserving the interests of the medical men was very conspicuous at the meeting.

The following members then repaired to the banquet tables, viz.: Drs. A. L. Chapman, C. E. Chapin, E. L. Brown, J. Y. Bonnett, T. H. Cantrall, J. W. Dobson, J. H. Fenelon, A. L. Fox, J. W. Fulwiler, W. H. Gardner, J. Little, E. Mammen, C. M. Noble, R. H. Noble, A. E. Rogers, E. E. Sargent, J. B. Taylor, Wm. Young, R. G. Yolton, and J. L. Yolton. After a bountiful repast, Dr. A. C. Cotton of Chicago, president of the Illinois State Medical Society, addressed the company for an hour on the "Possibilities of an Organized Medical Profession," abstract of which is as follows:

This city and its surgeons are a delight to me because it was a factor of no little moment in my life. Having been prepared for teaching at the Normal University, which profession I followed a greater part of the time since, I want to talk to-night in my usual rôle, rather than that of an executive. The doctor being a man of public life, he must meet human need of every variety. He comes to be a man of sacrifice and sympathy. Men have said to me when I was fighting out a problem of public health, why do you work so against your own interest? The layman finds it difficult to see us self-elected custodian of our neighbor's well being. Now, when the ever-shifting public sentiment is really jeopardizing our livings. He again thinks that we should be able to take care of ourselves and believes it a pernicious turn we have taken. I am convinced we must conserve our interests. It reminds me of the flag of revolutionary days showing a disjointed snake proclaiming that we must unite or die. Cook County has decided to unite, having now 65 per cent of the profession enrolled in the various societies. The country don't want Cook County to rule it. It must unless the county societies attain a larger percentage of membership and let their influence be felt upon the representatives in the legislature. Cook County has twelve special societies, and fourteen branch societies. There never has been such harmony to succeed. A common foe dispels discord.

Individuality in medical men is augmented by the very nature of their profession. Many are really isolated for various reasons. One is reminded of the raw volunteers, who were marching against a common foe in good order, when a rabbit dashed across the line of march and each thoughtful after his own table dashed after it. There is no doubt that in the last quarter century medical men have benefited for the commonwealth as much as any profession by dissemination of sanitary knowledge and securing sanitary legislation. I think that we can get what is needed for our own protection, if we will only ask for it and insist that it is due us. We, therefore, should organize, be harmonious and keep abreast of all legislative efforts that affect the medical profession.

Meeting Oct. 6, 1910

The McLean County Medical Society met in regular session at the City Hall, Bloomington, Oct. 6, 1910. Dr. E. Mammen, president, in the chair. Minutes of the previous meeting were read and approved. Motion prevailed that the secretary send a note of thanks and appreciation to Dr. A. C. Cotton for the address and attendance at the September meeting. Dr. Gardner, chairman of program committee, reported that the annual program was finished and submitted the program. The work was accepted and the secretary instructed to distribute the same among the members. The president reported that in consequence of the resignation of Dr. J. B. Taylor from the auxiliary legislative committee, Dr. C. M. Rhodes had been appointed to the place.

Upon request of cases to report Dr. Bath reported an operation upon a spina-bifida with favorable results considering age of six weeks. Dr. F. C. Vandervort reported an interesting case of tetanus in a girl aged fourteen years. When the case was first seen there was some rigidity of muscles of the neck and a history of a fall upon the back of the head. The first diagnosis was an injury to the

cord in the cervical region. The second visit showed unmistakable signs of tetanus, the rigidity having extended and the jaw being locked. Questions as to injury to hands and feet, then elicited the information after much consideration on the part of the mother, that three or four weeks ago, the girl had run a rusty nail into her foot. Examination revealed the scar. Three thousand units of antitetanic serum was injected at this time and followed by a like dose the following day. The spasms were very severe and pain in the right thigh was also present and paroxysmal. She received large doses of bromids, and had two hypodermic injections of morphin, and was given some liquid nourishment. After the fourth day the spasms grew shorter and gradually farther apart, and at the end of one week she was convalescent. The interesting points are: time lost in diagnosis, the long period of incubation, and last and most important, recovery with such a small amount of the antitetanic serum.

Dr. J. B. Taylor reported a series of very satisfactory cases of extirpation of the tonsil by means of the galvanic-cautery; this being especially gratifying in children. Dr. Sargent reported a recent case of apparent appendicitis, which developed into pneumonia.

Inquiry was made into the reported infantile paralysis at Brokaw Hospital. After a complete report of the attending physicians and a general discussion it was concluded that the report was erroneous and should be refuted. The paper of the evening, on "Appendicitis," by Dr. E. E. Sargent, was then given. The writer assumed that diagnosis being made, it then devolved upon the general practitioner to decide upon the proper time to operate or decline the same. It appears that no rule has been decided upon determining or classifying operable and non-operable cases. He believes that until data are collected, which will enable us to determine when Nature is telling us to wait, or show a beacon light of safety for operating, there will still be a great number of deaths from appendectomy. The essayist felt that the question of dealing with cases after seventy-two hours duration of fever was an important one. The discussion was very extended and great interest in the paper was manifested. Medical treatment had many victories to recall, but the consensus of opinion shown during the discussion was that, if early diagnosis can be made, early operation was preferred. The members taking part in the discussion were: Drs. Sloan, Turner, Chapin, R. A. Noble, Covington, Guthrie, Gardner, Rhodes, J. W. Smith, Dobson and Dr. Mammen.

Dr. E. P. Sloan reported a successful recent nephrocolopexy.

The essayist of the evening, Dr. W. E. Guthrie, discoursed upon the "Significance of Abdominal Pain." The address was full of interest to the entire attendance.

MORGAN COUNTY.

November Meeting

The Morgan County Medical Society met Thursday evening, November 10, at the Pacific Hotel, Jacksonville, with the following physicians in attendance: Drs. Adams, Black, G. W. Bradley, Bowe, Cole, Crouch, J. U. Day, Dewey, Gailey, Gregory, Hairgrove, Hardesty, McLaughlin, Norbury, Norris, Pitner, Reid, Stacy, Stubblefield, Treadway, Vertrees, Clampit, J. K. Elder, J. M. Elder, Sharpe and J. W. Eckman of Winchester. Dr. Grace Dewey presided. Drs. L. H. Clampit, F. E. Munch, and Anne H. McF. Sharpe of Jacksonville, J. M. Elder of Franklin and Lee W. Fulton of Alexander were proposed for membership.

Dr. F. P. Norbury, a member of the society, now Superintendent of the Kankakee State Hospital, was present for it is hoped, his first annual address to his former colleagues and presented in a very graphic and interesting manner, "The Psycho-Neuroses, their Present Status and Methods of Treatment." Drs. E. L. Crouch and Edward Bowe discussed Dr. Norbury's paper.

The members of the society were cordially invited by the members of the Woman's Club to hear Dr. I. D. Rawlings of Chicago speak on the subject of "Medical Inspection of Schools." An invitation was received for the annual dinner and banquet of the Sangamon County Medical Society which occurs December 14 in Springfield.

December Meeting

The Morgan County Medical Society held its annual meeting Thursday evening, December 8, at the Public Library, Jacksonville, Illinois, with the following physicians in attendance: Drs. Adams, Black, Campbell, Crouch, Dewey, Gailey, Gregory, Hairgrove, Hardesty, Hinton, Hughes of Waverly, King, Leonard, Milligan, Norris, Ogram, Reid, Stacy, Webster of Murrayville and Woltman. Drs. L. H. Clampit, F. E. Munch and Anne H. McF. Sharpe of Jacksonville, J. M. Elder of Franklin and Lee W. Fulton of Alexander were elected to membership. Report of the retiring president, Dr. Dewey, covered the work of a successful year in the society. In addition to the papers presented by local physicians, Drs. Harris of Chicago, Bartlett of St. Louis and Norbury of Kankakee, made addresses. There are 58 physicians in the county and state membership of the society in good standing, eleven doctors in the county are eligible to membership and twelve are not eligible. Reports of the special committees on Contagious Diseases and Medical Inspection in Public Schools show satisfactory progress. Election of officers for the ensuing year resulted as follows: President, H. C. Woltman, Jacksonville; vice-president, N. J. Hughes, Waverly; secretary, A. R. Gregory, Jacksonville; treasurer, A. L. Adams, Jacksonville; librarian, Carl E. Black; censor, for three years, H. C. Campbell.

Dr. G. W. Miller of Woodson, who for many years has been a member of the society and an active practitioner in the county, was elected to honorary membership.

GEORGE STACY, M.D., Secretary.

THE PSYCHO-NEUROSES: THEIR PRESENT STATUS AND TREATMENT*

FRANK P. NORBURY, A.M., M.D., SUP'T KANKAKEE STATE HOSPITAL

The growth of interest in abnormal psychology as shown in modern research work and current general and medical literature, warrants the discussion of this subject. Only a résumé will be attempted, and of this, only such as will give comprehensively the attitude of modern psychologic medicine. The psychiatrist of twenty-five years ago would hardly recognize his specialty in the nomenclature, classification, methods of analysis and therapeutics of to-day. Likewise the neurologist of ten years ago or even five years ago, who would adhere to his beliefs concerning the psychoneuroses then prevalent, would find he had not kept step with progress.

To the patient research worker we owe this progress in psychiatry, just as we owe to him the advances in other fields of practical medicine. By psychoneuroses is meant mental disorders, due to some derangement in the functioning of the nervous system, without recognizable changes in the organs of the body. Included in this definition are hysteria, psychasthenia, the anxiety psychoses, etc. Neurasthenia in the light of its modern conception is, in my judgment, a separate and distinct entity, capable of being differentiated and properly belonging to the fatigue neuroses. While it is true that hysteria also has, or may have a fatigue basis, yet it has more, viz.: a profound psychologic etiologic factor. Janet says: "Fatigue is the starting point of all great neuroses." This, my experience has verified; in an accounting of major and minor ailments coming within this scope, we find their variation to be in degree and not in kind. To insure a neurosis, there must be a proper soil; a certain psychic attitude; a succeptible condition of mind, which directly or indirectly is the outgrowth of exhaustion, prolonged, sustained, either in the patient or in his fore-bears. Given such a soil and with an environment where misadaptation is in evidence,

* Abstract of address before the Morgan County Medical Society, Nov. 10, 1910.

either through faulty training, psychic discordances or disruptive experiences with faulty beliefs, or other unsocial conditions in general, and we have the field fertilized for the growth and development of a psycho-neurosis. These and a host of other possible conditions, largely individual but psychic in nature, lay the foundation and contribute to the superstructure of the neuroses in their building. This building of the superstructure is through the association of ideas, the feeling tones as expressed by the emotions and other conditions leading to the formation of what we term complexes. A complex exists in every psycho-neurosis, and to grasp the growth of its formation, its subsequent dominance in thought and conduct, we need to understand the psychologic principles which govern its evolution. It is through the work of the research student, that these principles have been developed. The technic of their application in clinical work, is of equal importance to the technic of the surgeon, or the laboratory worker in other fields of clinical pathology. Hence, the importance of acquaintance with the psychologic principles.

Dr. Norbury then briefly stated these principles governing association of ideas, of feelings, emotions, sensations, movements, visceral functions, etc., showing the linking in systematic formation of them all, in the formation of a complex, and how the stimulation of one stimulated all and caused reactions which may work for the weal or woe of the individual.

He then said: The complex thus formed contained both psychic and physical factors, just as is demonstrated in the educational methods found to exist in our every-day experience from the cradle to the grave. These being shaded by our emotions, our intellection, etc. Prince says: "The education of the mind and body depends on the artificial synthesizing of functions into a complex adapted to the end or useful purpose." "By the same means the principal functions may be synthesized by education into a complex which does *not* serve a useful purpose, but is harmful to the individual. When this occurs, we call it abnormal, and it then becomes a psychoneurosis."

It is evident, then, that a psychoneurosis is a perversion of a normal process; it may have its origin in an acute experience or by a constantly repeated experience (by education). It should be our purpose to analyze this experience and to study it we call to our assistance the means suggested by Jung, whereby we study the association of ideas, feelings, etc., by what is known as the association process. By Jung's method we discover the constellations, and with the clue thus given we follow up by Freud's psychic-analysis, the whole complex until it is unravelled. This analysis gives relief to the individual, because it releases him from the unconscious thralldom of an abnormal psychic or mental state, which may not only impair his happiness and comfort, but jeopardize his usefulness and truly alienate him as a member of a family and as a citizen.

Dr. Norbury then explained Jung's method of association tests, showing how by a number of words (100 carefully selected words being used by Jung) being slowly given to the patient, with instructions to at once respond with word or words entering their minds at the suggestion of the word given them—the time required for this reaction being carefully measured by a stop watch. Then when all of the words have been given out, a study of reaction time is made, the time being grouped, and from this summary the clew is given to the nature of the complex. To fully understand the significance of these findings one must be familiar with memory processes; with memory conservation, dissociation, etc.,; with stimulation, which reveals the residues of experience; with memory of feeling tones as taught by James, Prince, Janet and others.

With these findings we proceed by Freud's method of analysis to study the case thoroughly. Freud uses purely psychologic methods founded on the principles stated. He teaches that the complexes are made up of three elements: 1, intellectual elements; 2, emotional or affective tones; 3, certain conative tendencies. These elements make up the complex as a whole, and that complexes are permanently present, but not constantly active. A complex only becomes active when stimulated in some way. This stimulation occurs wherever one or more

of the ideas belonging to the complex is aroused to activity either by some external event or by some memory association occurring within the mind itself as in dreams.

Dr. Norbury explained Freud's dream analysis, and concluded his address with a recital of work being done in the Psychopathic Service at Kankakee State Hospital, especially the work of Dr. Charles F. Read.

Dr. Norbury especially emphasized that Jung's association tests must be preliminary to Freud's analytical methods. Further, that the personal confidence of the patient must be obtained, and that real, genuine, honest sincerity must be the basis of the examiner's attitude toward the patient. Without this the most comprehensive or astute methods will fail.

ROCK ISLAND COUNTY.

The regular bi-monthly meeting of the Rock Island County Medical Society was held at the Manufacturers Hotel, Moline, Oct. 11, 1910. The minutes of the August meeting were read and approved. The secretary read a communication from President Andreen in answer to the society's letter of appreciation of Augustana College permitting the establishment of a medical library in the new Denkmann Memorial building. The Chicago Medical Society through its secretary extended the local society an invitation for a joint meeting of the two organizations. This was accepted and the chair appointed Drs. Hollowbush, First and Mueller as a committee to arrange for such a meeting. The names of Drs. J. W. Seids and E. G. Norman of Moline, were balloted upon for membership. Both were elected. After dining, Dr. Alfred C. Cotton of Chicago, president of the Illinois State Medical Society, was introduced and spoke on "Medical Organization." He remarked that Rock Island County physicians seemed to be well organized and therefore his topic was somewhat superfluous. Dr. Cotton enumerated the many advantages of a strong organization, interspersing his remarks with appropriate reminiscences and in conclusion dilated upon the altruistic nature of a physician's vocation. Present: Drs. Bennett, Eyster, First, Meyer Wiggins, Hall, Eddy, Norman, Wright, Williams, Snively, Chapman, Lamping, Rhinehart, Hollowbush, Gardner, Dailey, Leipold, Souders, Sala, Long, Sargent and Mueller. Guests: Dr. A. C. Cotton of Chicago; Drs. Rendleman, Littig and Bendixon of Davenport, Ia.; Drs. Love and Littig of Iowa City, Ia. ALBERT N. MUELLER, M.D., Sec.

VERMILION COUNTY

The Vermilion County Medical Society was called to order by the president, Dr. Benjamin Gleeson, at 8:30 p. m., Dec. 12, 1910. Minutes of previous meeting were read and approved, after which Dr. Fisher presented an interesting neurotic case. No members felt disposed to make a diagnosis in the short space of time spent in examining the case, but the Wassermann test was suggested.

After the case was shown, Dr. Cochran read his excellent paper on "Infantile Paralysis from a Bacteriologic Standpoint." The author was liberally complimented on his paper, which was the subject of much discussion from a clinical point of view. Based on the recent findings and advice from the State Board, it was decided to quarantine every family in which it occurs. Dr. Becker, our health officer, advises eleven days' quarantine in each case.

After Dr. Cochran closed the discussion, the society proceeded to elect officers for the coming year, as follows: president, Dr. E. E. Clark; vice-president, Dr. J. G. Fisher; secretary and treasurer, Dr. Solomon Jones (reelected); censor, Dr. Leo Fairhall.

Dr. Coolley moved that the secretary act as delegate to the state meeting at Aurora, to be held in May, 1911. Carried.

Dr. Glidden suggested that the county society issue each month a little bulletin setting forth the proceedings of the month's meeting to be mailed to each

member of the society, he thinking it might act as a stimulus to those not present, hence encourage a fuller attendance. No action was taken in this matter.

Adjourned for lunch prepared by Mr. Eli Brown, caterer. After the lunch a smoker followed. The cigars were the compliments of the Schultz Drug Company. The following were present: Drs. Benjamin Gleeson, Solomon Jones, C. E. Wilkinson, H. F. Becker, O. W. Allison, H. S. Babcock, Robert Clements, G. L. Williamson, H. B. Downs, B. Taylor, E. B. Coolley, W. R. Tennery, M. Howard, S. W. Jones, J. G. Fisher, George Steely, E. E. Clark, F. M. Mason, R. A. Cloyd, W. A. Cochran, J. B. Morton, H. F. Hooker, S. C. Glidden, F. N. Cloyd, G. W. Fuller, A. Merrill Miller, T. E. Walton, Leo Fairhall, McIntosh, V. C. T. Kingsley, Fred Baumgart, R. L. Hatfield, C. H. Brown, S. L. Landauer, A. E. Dale, O. H. Crist, H. N. Bascom, Peoria, Ill., visitor.

SOLOMON JONES, Secretary and Treasurer.

WARREN COUNTY

The Warren County Medical Society met in the County Court Room, Monmouth, on Friday, Nov. 4, 1910. After the routine work of the society was transacted Dr. S. C. Stremmel of Macomb presented a paper entitled "The Modern Conception of Extra-Uterine Pregnancy." He said that when he graduated in medicine twenty-one years ago, his conception of extra-uterine pregnancy was certainly embryonic, that there was very little known about the real facts concerning this very common condition until within the last few years. A few years ago appendicitis had the floor for discussion and now extra-uterine pregnancy has, and should have, until the real facts are threshed out. It is always caused by some injury to the Fallopian tube, inflammatory or otherwise, that is, that anything that interferes with the passage of the ovum from the ovary to the uterus would cause it. The symptoms were explained in detail. An interesting statement was made in regard to the prognosis. Some very eminent men say that 70 per cent. of these cases will eventually recover without operation. It was his opinion that 50 or 60 per cent. would be nearer. The treatment is surgical, as soon as the diagnosis is made, excepting cases that were dying when first seen. The time to operate is early, before rupture occurs, but many cases are not seen by the doctor until rupture has already occurred.

Dr. Ralph Graham of Monmouth presented a paper in which he reviewed the literature of the recent epidemics of poliomyelitis.

Dr. Ralph Webster of Chicago, in discussing the subject "Circulatory Stimulants and Depressants, Their Indications and Contra-indications," laid his foundation by bringing out the salient features of the anatomy and physiology of the heart and circulatory system. Considerable emphasis was laid on the regulation of the beat, the bundle of His being discussed at length. The pathology of the various cardiac disturbances was then brought out, and the results of abnormalities in the various cardiac valves was elaborated. Special stress was given to the point that no drug should be used in circulatory disturbances, unless a special therapeutic indication existed. The indications and contra-indications for the use of digitalis and allied drugs, strychnin, caffein, aconite and the nitrites were then taken up.

This meeting was well attended by members of the county society and a number of the Galesburg physicians were present. A general discussion of papers presented by Drs. Stremmel and Webster followed their reading, after which Dr. A. G. Patton of Monmouth reported his experiences in using Beck's paste in tubercular sinuses, presenting a case in which he had successfully used it in a tubercular hip joint.

WHITE COUNTY

The White County Medical Society met at the offices of Drs. Lehman and Niess, Nov. 22, 1910. The following members were present: Drs. Sibley, Boyer, Ellis, Staley, Long, Lehman, Niess and Leslie. Time and place of next meeting

voted some time in February. The name of Dr. McHenry was presented for membership and passed on. Admitted. Motion made by secretary (Niess) to revise White County Medical Society fee bill, and to have chairman appoint committee to revise the same and report at the February meeting. Committee composed of Drs. J. L. Lehman of Carmi, W. Ellis of Grayville and F. Leslie of Maunie. The following program was rendered: 1. "Case of Eclampsia," by Dr. W. Ellis of Grayville. This was an interesting and ably prepared paper, touching on the important features of disease in regard to etiology, pathology, symptomatology, treatment and prognosis, with report of case. This paper was discussed by members of the society. 2. "Varicose Ulcers, Treatment and Report of Cases," by Dr. F. Leslie of Maunie. This also was an interesting paper and ably discussed by members of the society. Adjourned. J. NIESS, Secretary.

Book Notices.

HYDROTHERAPY: A Treatise on Hydrotherapy in general; its application to special affections; the technic or processes employed; and use of waters internally. By Guy Hinsdale, A.M., M.D., lecturer on Climatology, Medico-Chirurgical College of Philadelphia. Octavo of 466 pages, illustrated. Philadelphia and London; W. B. Saunders Company, 1910. Cloth, $3.50 net.

Dr. Hinsdale's work on the water cure is probably the most complete and satisfying work that has yet appeared of American origin. As the doctor says in his preface, "hydrotherapy by the use of modern apparatus is a powerful aid in therapeutics, rapidly growing in popularity as the knowledge of its technic becomes more widely diffused." It seems strange that this treatment in America continues to lag so far behind Germany, Austria and France, and it is high time that our medical men prepare themselves to get out of hydrotherapy all there is in it. That is not to say that no other means are applicable in connection with the water cure. We therefore welcome this excellent hand-book and hope that it will have a wide patronage.

THE PHYSICIANS' POCKET ACCOUNT BOOK. By J. J. Taylor, M.D. 212 pages. Leather. Price $1 postpaid. J. J. Taylor, Publisher, 4105 Walnut St., Philadelphia, Pa.

The especial feature of this book is a system of accounts whereby each transaction can be recorded in a moment's time in plain language, so that it is strictly legal as evidence in court without personal explanation, and so arranged that any patron's account can be ascertained on demand without any posting. There is only one entry of each transaction, and this in such a form that no posting is ever required. It saves time, labor and worry, and insures that your accounts are always up to date, so that you can send statements out every month without any delay and can inform any patron, wherever you may meet him, of the exact state of his account. This feature alone in the course of a year will secure payments for you—that would otherwise be missed—sufficient to buy your account books for a whole lifetime. It is the simplest, quickest and easiest legal account system on the market.

The book also has some easy and practical directions for billing and collecting, some excellent business and legal hints, some valuable forms for emergency use, such as "dying declarations," "form for wills," etc., an average medical and surgical fee bill, besides miscellaneous tables, clinical directions, etc. Having a good cash account department and various clinical records—vaccinations, deaths and confinements—it forms a complete year book for the physician's pocket.

For those who prefer to keep their accounts at the desk, the same system has been enlarged into a desk size book of 400 large sized pages, the price of which is only $5 per copy.

NEWS OF THE STATE

PERSONALS

Dr. Titus P. Yerkes, Upper Alton, has gone to Rochester, Minn., for a surgical operation.

Dr. Alice Conklin suffered $3,000 loss in a fire which almost destroyed the apartment building in which she resided, November 18.

Dr. Frank L. Clemens has been appointed a member of the medical staff of Graham Hospital, Canton, vice Dr. D. Dennison Kirby, resigned.

Dr. Frank Allport is spending several weeks in New York and other eastern cities studying the work done in the various eye and ear hospitals.

Dr. William E. Morgan, who was operated on for appendicitis at Mercy Hospital, November 25, is reported to be going on well toward recovery.

Dr. and Mrs. Isaac K. Abt have returned from abroad where Dr. Abt has been making a study of hospital construction, with especial reference to hospitals for children.

Dr. Charles M. Noble, Bloomington, who was painfully injured in a machinery accident in Sunflower, Miss., has been brought to St. Joseph hospital, Bloomington, and is reported improving.

NEWS

—Dr. R. C. Bradley, Peoria, was reelected county physician by the board of supervisors.

—Dr. Margaret D. Mitchell of Aurora, under arrest on action of the coroner, threatens to make things interesting for the prosecution.

—At a meeting of the Physicians Club of Monmouth, December 2, Dr. Chauncy Sherrick was elected president and Dr. Joseph R. Ebersole secretary.

—Dr. G. M. French of Peoria was elected medical director of the Court of Honor of Springfield, to succeed Dr. J. M. White, whose death occurred recently.

—Walter Farwell, Lake Forest, has donated to the recently organized Lake Forest Hospital Association an acre of land for a site for the hospital to be erected.

—If you are drunk and quarrelsome at 2 a. m., better not go home and throw your wife through the window. It will put you in bad with your mother-in-law.

—The Norwegian Deaconess Home and Hospital at 1138 North Leavitt Street, Chicago, dedicated November 20, will accommodate 100 patients and fifty deaconesses.

—S. Hirschfeld, a graduate of the National Medical School University, charged with practicing medicine without a license, is said to have been found guilty and fined $200.

—Dr. J. H. Bacon of Peoria was operated on for appendicitis at the Proctor Hospital on December 29. He is reported doing nicely since the operation and expects to be home soon.

—Mr. Charles B. Ball, chief sanitary inspector of the Chicago Department of Health, in a recent address at Freeport advised the installation of school medical inspection as the best means of lowering the death-rate of that city.

—Dr. L. Emmett Holt, professor of diseases of children in the Medical Department of Columbia University, New York City, gave the annual address before the Chicago Pediatric Society, December 17, on a "Study of 300 Cases of Acute Meningitis in Infants and Young Children."

—The new president of the Cook County Board has received letters from many prominent physicians of the city recommending that Dr. Haim I. Davis be retained as county physician on account of the record he has made in that office, and expressing the hope that political reasons will not cause Dr. Davis's removal.

—The Chicago Charity Hospital was closed in November for lack of public support and the patients were transferred to the Wesley Hospital, by which the building was purchased. The charity hospital had an honorable career for over twenty years and became too burdensome for the directors in the face of public indifference.

—In the third trial of the case of Mrs. Carrie Smith against Dr. Ernest B. Mammen, Bloomington, in which damages were claimed on account of the alleged leaving of a sponge in the abdominal cavity after a surgical operation, a jury in the circuit court is said to have brought in a verdict for the plaintiff, assessing damages of $1,500.

—It is difficult to keep track of the nominal head of the Cook County Institutions whether *de jure* or *de facto,* under the kaleidoscopic series of discharges, resignations and appointments instituted by the president and opposed by other members of the Cook County board. The only obvious fact is that the rapid-fire changes are ruinous to discipline. Dr. O. C. Willhite deserves the sympathy of all who wish to have the medical positions in any public institutions freed from partisan politics.

—The September issue of the *Bulletin* of the State Board of Health is devoted to the consideration of acute poliomyelitis, and includes articles by Dr. Israel Strauss, New York City, on "Pathology"; by Dr. Simon Flexner, New York City, on "Experimental Poliomyelitis"; "A Review of the Literature of 3,532 Cases," by Dr. Frank E. Coulter, Omaha; "Acute Poliomyelitis," by Dr. J. S. Fowler, Edinburgh, Scotland; "Surgical Treatment of Infantile Paralysis," by Dr. Max Herz, Sydney, Australia; and "Report of Epidemics," by Drs. F. M. Armstrong, St. Paul; Colin K. Russel, Montreal, and C. A. Anderson, Stromsberg, Neb.

MEDICAL SOCIETY NOTES

—The Peoria City Medical Society met Tuesday evening, Dec. 20, 1910, and elected the following officers: president, Dr. A. L. Corcoran; first vice-president, Dr. W. B. Short; second vice-president, Dr. J. H. Ulrich; censor, Dr. Edward Hasson; secretary-treasurer, Dr. E. W. Oliver; delegate to state society, Dr. George W. Parker; director to represent the Peoria City Medical Society in the newly organized "Peoria Association of Commerce," Dr. Clifford U. Collins.

PEORIA VS. OPTOMETRY

Be it Resolved, That the members of the Peoria City Medical Society are unalterably opposed to the proposed "optometry" bill, which is to be introduced at the coming session of the State Legislature.

That the granting of a license by the state to any person to practice "optometry" who has had little or no training in the fitting of glasses—a few weeks at the most—who knows absolutely nothing as to the normal or diseased conditions of the eye and who would be examined by a board composed of their own members—none of whom have ever had any medical training whatsoever—is contrary to the welfare of the people of the State of Illinois in general, a large majority of whom, in case the bill becomes a law, could not distinguish, if both are granted licenses by the state, between the qualifications of the regularly trained physician and those of the so-called "optometrist."

That no member of this society shall support this proposed legislation in any manner whatsoever, nor sign any petition in support of same, and if such has already occurred, that such name shall be immediately withdrawn.

That this society does not seek to stop opticians from selling glasses nor the right of individuals to have their eyes examined by anyone, but this society does object to the granting of any license by the state to non-medical persons for the fitting of glasses or the giving of advice on medical subjects.

E. W. OLIVER, Sec'y.

PUBLIC HEALTH

—Owing to the greatly increased prevalence of diphtheria in Chicago the finance committee of the city council voted to appropriate $10,000 to fight the epidemic. This will provide funds to run the health department laboratory night and day, and also for additional medical inspectors for the public schools. Bacteriologic examination of throat cultures from the pupils in several schools disclosed diphtheria carriers who, while not sick themselves, were carrying the disease to others.

—Victory for the "open-air" room plan in public schools of Chicago was won recently at a meeting of the buildings and grounds committee of the board of education. Principal William E. Watt of the Graham School, originator of the "open-air" idea, reported the success of the experiment as he had carried it on so convincingly that the committee granted him permission to establish twenty rooms of his school along his plan. This will leave only a few rooms for those pupils whose parents object to the new idea.

—Dr. George T. Palmer, superintendent of health, Springfield, is trying to secure prompt and complete returns of contagious diseases

from physicians. In November four deaths from diphtheria occurred before the cases were reported. "The fact that four deaths occurred from diphtheria with less than a dozen cases under quarantine led to the presumption that physicians are not reporting cases as generally and as promptly as they should." In one of the fatal cases the parents of the victim refused to permit antitoxin to be administered.

—When the weather becomes cold the easiest thing to do is to shut the windows. This is easy, but it has no other advantages. If the windows are closed tightly the air will become foul and the danger from consumption and pneumonia is increased. If you will notice the bedroom windows as you pass along the street in the early morning you will see that most of them are tightly closed. You will be sure the air of these rooms is dangerously foul. As the weather gets colder the danger from contagion increases. Carelessness on the part of those who have had scarlet fever or diphtheria takes many lives at all seasons, but it is most harmful just at this season.—*From Bulletin, Chicago Department of Health.*

—Diphtheria cases in Chicago began a gradual increase in September culminating in the week ended December 10 with 653 cases, including 348 carriers of bacilli detected among the school children by the medical examiners, who took cultures from all the children in school rooms having several cases of diphtheria. Much opposition developed to the modified quarantine devised by the department but a rapid decrease in the number of cases following the enforcement of the rule requiring "carriers" to stay at home. Treatment by the family physicians to destroy the vitality of the bacilli in the fauces enabled the examiners to secure negative cultures on the third to the fifth day in most of the carriers and the pupils lost on the average only a week from school.

—Chicago's health as measured by the death returns, has not been as good the past year as the preceding year. The year closed with a gross death-rate of 15.1 per 1,000 of population as against 14.6 in 1909; 14.5 in 1908 and 15.7 in 1907. As compared with the average death-rate of the preceding ten years the 1910 rate is 0.5 per 1,000 inhabitants higher. The preventable diseases killed almost 15,000 Chicagoans in 1910, nearly one-half the total mortality. Pneumonia leads with 5,679 deaths, tuberculosis is second with 3,812 deaths, while diarrheal diseases claimed 3,084 children under 2 years of age. Diphtheria killed 840 as compared with 675 in 1909 and 564 in 1908. About 65 per cent. of the 10,000 deaths of children under the age of 5 years was due to preventable diseases.

—The Chicago Department of Health offers a series of lectures on the subject of "Milk Pasteurization" for men engaged in this work, the general principles concerned in the proper heating and handling of milk. The first lecture, Dec. 29, at 117 Market Street, was an introductory lecture given by W. A. Evans, commissioner of health, and followed by a demonstration on elementary milk bacteriology by Dr. F. O. Tonney, director of the municipal laboratories. The other lectures are as fol-

lows: January 5, "How Bacteria Get Into Milk and the Effect of Heat and Cold on Bacteria," J. C. Johnstone; January 12, "The Essentials of Proper Milk Pasteurization," Dr. B. Perry and J. C. M. Krueger; January 19, "Care of Milk After Pasteurization," Dr. Gottfried Koehler.

AEROGRAMS

Fresh air is the best life assurance agency.

Foul air befouls the body—be dirty and you'll be sickly.

Pure air makes pure blood—pure blood makes you disease-resisting.

Colds are "catching"—easy to catch but hard to lose.

To arrest a cold, liberate the foul air in your room.

"Dope" for colds is "meat" for the doctor.

Pneumonia is the child of faulty pneumatics.

Coddle yourself and you flirt with pneumonia.

The man with a chest protector can shy no stones at the woman with the lace hose and peek-a-boo waist.

Get the fresh-air habit.

Ventilate.

—From *Bull. Chicago Department of Health.*

DON'TS FOR DIPHTHERIA

Don't delay.

Don't wait until to-morrow if the child complains of sore throat. Call the doctor to-day.

Don't delay giving antitoxin because you haven't the money in your house to pay for it. You can get it free by calling the Department of Health.

Don't say "I don't believe my child has diphtheria. I'll wait a day or two and see." If you don't know, find out.

Don't go into a neighbor's house when you see a red card on the front. That means *"stay out."*

Don't take any chances with diphtheria. Better be safe than sorry.

Don't cheat the doctor out of his fee; the undertaker will charge more to bury than the doctor will to cure.—*From Bulletin, Chicago Department of Health.*

—In our efforts to stop diphtheria we have quarantined "carriers" of diphtheria germs when found in school. The practice is to culture all throats in a school-room to which a case of diphtheria has been traced. Any school child, so cultured, found to have diphtheria germs in the throat, will be quarantined at home until a subsequent culture proves negative. None but the carriers will be quarantined. Other children in the family will be allowed to go to school. Visitors in the home are prohibited. A special warning card will be posted on the front and rear of the house or apartment.

The card is white, on which is printed in large letters:

CARRIER OF DIPHTHERIA HERE—KEEP OUT

Below this on the card is printed matter explaining the requirements of the department in the case, as follows:

"A diphtheria 'carrier' may not be sick, but has diphtheria germs in the throat and can spread diphtheria. Such persons will be required to stay in the house until the throats are free from germs. Cultures will be taken to determine this. Other persons in the house can go in and out. Neighbors and friends must stay out. Milkmen must take the usual precautions. These rules must be obeyed until this warning card is taken down by the Department of Health."

A printed slip is handed to the family, which reads as follows:

DEPARTMENT OF HEALTH—CITY OF CHICAGO—INSTRUCTIONS FOR PARENTS IN CASES OF DIPHTHERIA CARRIERS

A microscopical examination of a culture from the throat of your child shows the presence of diphtheria germs. The child may not feel sick, but diphtheria germs are dangerous to anyone having them in the throat, and to others as well.

For the safety of the child and other members of the family you should have your doctor use something to destroy the germs now in the throat. *Do not* take the child to the doctor. Call the doctor in or see him yourself.

Cultures will be taken from the throat to tell when it is safe.

For the safety of the neighborhood the Department of Health will require the child to remain in the house until the throat is free from germs.

Other persons living in the home can go in and out.

Neighbors and friends must be kept out of the house.

The milkman must take the usual precautions.

These rules must be obeyed until the warning card is taken down by the Department of Health."—From *Bulletin, Chicago Department of Health.*

—Better treatment and better control of diphtheria have prevented fully 25,678 deaths from that disease in this city in the last fourteen years. By far the greater part of the credit for this remarkable saving is due to the employment of antitoxin.

Before antitoxin came into use the diphtheria death rate averaged 136 for each 100,000 inhabitants each year; in the last fourteen years, during which antitoxin has been employed, the diphtheria death rate has dropped to thirty-six—a saving of 100 lives in each 100,000 people for each year.

Remarkable as this saving appears when compared with reductions which have taken place in certain other preventable diseases, it is not nearly as great as it should be in view of the positive curative and preventive agency which we have at our command.

Antitoxin will cure practically all cases of diphtheria—*if the antitoxin in proper doses is given in time.* It will prevent the development of the

disease in those who have been exposed—*if the proper immunizing dose is given in time.*

The deaths which to-day are occurring from diphtheria are due chiefly to ignorance, carelessness or neglect—the parents of the victims usually being the guilty parties. Sometimes the doctor is the sinner.

Failure to pay heed to the oft-repeated warnings regarding the dangers of neglecting "simple sore throats," failure to call the doctor in the earliest stages of the disease, neglect to secure immediate treatment of the cases and of immediate immunization of the contacts is costing many an innocent little child its life. The blame must be placed where it properly belongs—on the parent, in 99 out of every 100 cases.

Poverty is no excuse for failure to secure the necessary treatment to save your child's life. Antitoxin is as free as water—it can be secured by anyone at any of the twenty-eight free antitoxin stations which have been established by the State Board of Health throughout the city.

All that the parents are required to do in order to save their children's lives is to *act promptly.* At the first symptoms suspicious of diphtheria, such as sore throat, send for your physician. Don't wait to see what to-morrow's developments will be. A few hours' delay may cost the life of your child—it's costing too many children their lives to-day; it's costing many parents untold anguish.

If antitoxin is given on the first day of diphtheria there will be no deaths; if on the second day, nearly all of the cases will get well; if on the third day, most of the sick children will recover; if on the fourth day, large numbers will die. Later than the fourth day antitoxin does very little, if any, good.

Give enough antitoxin on the first day—2,000 units will usually do. On the third day 5,000 units is usually required. On and after the fourth day less than 10,000 units is seldom of service.

In diphtheria cases *be up and doing—delay means death.* If you cannot employ a physician call up the Health Department.

And remember that many "simple sore throats" are nothing more nor less than diphtherias; of grave danger to the patients and spreaders of the infection to others.—From *Bulletin Chicago Department of Health.*

CHANGE OF LOCATION

Dr. R. B. Crews has moved from Wynoose to Clay City, Ill.

Dr. G. W. Pridmore, Clay City, has retired from medical practice.

Dr. E. A. Everett has removed from Alhambra, Ill., to 1131 West Indiana Street, Evansville, Indiana.

Dr. William Weaver Hartman, Chicago, has moved to his new office and residence, 5043 Kenmore Avenue.

MARRIAGES

BOHUMUR J. DVORSKY, M.D., to Miss Rose M. Votipka, both of Chicago, November 24.

CHARLES HENRY MCDONALD, M.D., to Miss Vesta L. Vradenburg, both of Arthur, Ill., November 17.

HERMAN THEODORE BECHTOLD, M.D., O'Fallon, Ill., to Mrs. Elle Merch-Bechtold of Belleville, Ill., November 17.

DEATHS

E. L. HERRIOT, M.D., for many years a resident of Jacksonville, died at Fort Worth, Texas, Nov. 30, 1910.

JOHN R. CHATHAM, M.D., Washington University, St. Louis, 1873; died at his home in Tamms, Ill., November 13, from cerebral hemorrhage, aged 68.

KAMES COLUMBUS OZEE (license, Ill.); for thirty-five years a practitioner of Illinois; died at the home of his brother in Mattoon, November 2, from cerebral hemorrhage, aged 69.

HERBERT GEORGE CHISLETT, M.D., Hahnemann Medical College, Chicago, 1903; of Berwyn, Ill; died in the Hahnemann Hospital, Chicago, November 22, from pneumonia, aged 44.

GEORGE ANTHONY BYRS, M.D. Rush Medical College 1855; assistant surgeon of the One Hundred and Nineteenth Illinois Volunteer Infantry during the Civil War; died at his home in Clayton, Ill., October 25, from senile debility, aged 81.

HENRY HEIDELBERG, M.D., St. Louis College of Physicians and Surgeons, 1891; member of the American Medical Association; and president of the Monroe County Medical Society; died at his home in Hecker, Ill., July 2, from cirrhosis of the liver, aged 40.

E. H. HAMILL, M.D., for many years medical director of the Prudential Life Insurance Company, died at his home in Chatham, N. J., Oct. 30, aged 66. Dr. Hamill practiced in Jacksonville, Ill., for about five years beginning with 1875, leaving in 1880.

FRANK E. MCGANN, M.D. Barnes Medical College of St. Louis, 1904; a member of the Illinois State Medical Society and coroner of Brown County; and formerly secretary and treasurer of the Brown County Medical Society; died at his home in Mt. Sterling, November 28, from pneumonia, aged 30.

J. G. COX, for sixty years a practitioner of medicine of Jacksonville, Ill., and Humboldt, Neb.; a veteran of the Mexican War; assistant surgeon of the One Hundred and Fiftieth Illinois Volunteer Infantry during the Civil War; died at his home in Humboldt, Neb., July 15, from senile debility, aged 87.

WILLIAM WATSON, M.D., Rush Medical College, 1854; surgeon of the Eleventh Iowa Volunteer Infantry during the Civil War, and for two years surgeon-in-chief of the Military Hospital, Rock Island, Ill.; a practitioner of Dubuque, Iowa, until 1901, and thereafter of River Forest, Ill.; died at the home of his son in that place, November 21, from the effects of a fall, aged 84.